

FIG. 1A

2/29

MNKQQKEFKSFYSIRKSSLGVASVAISTLLLLMSNGEAQAAAEETGGTNTEAQPKEAVASPTTTSEKAPETKPV  
 ANAVSVSNKEVEAPTSETKEAKEVKEVKAPKETKEVKPAAKATNNTYPILNQELREAIKNPAIKDKDHSAPNSRP  
 IDFEMKKKDGTTQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKLVSYDTVVDYAYIRF  
 SVSNGTKAVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEEDYKAEKLLAPYKKAKTALERQVYELNKIQD  
 KLPEKLLAEYKKKLEDTKKALDEQVKSATEFQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGM  
 LNGKKYVMETTTNDDYWKDFMVEGQVRVTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVD  
 KEAFTKANTDKSNKKEQQDNSAKKEATPATPSKPTPSPVEKESQKQDSQKDDNKQLPSVEKENDASSESQKDKTP  
 ATKPTKGEVSSSTTPTKVSTTQNVAKPTTASSKTTKDVVQTSAGSSEAKDSAPLQKANIKNNTNDGHTQSQNNK  
 NTQENKAKSLPQTGEESNKDMTLPMLALLALSSIVAFVLPKRKN

FIG. 1B

MGNKQQKEFKSFYSIRKSSLGVASVAISTLLLLMSNGEAQAAAEETGGTNTEAQPKEAVASPTTTSEKAPETKPV  
 VANAVSVSNKEVEAPTSETKEAKEVKEVKAPKETKEVKPAAKATNNTYPILNQELREAIKNPAIKDKDHSAPNSR  
 PIDFEMKKKDGTTQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKLVSYDTVVDYAYIR  
 FSVSNGTKAVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEEDYKAEKLLAPYKKAKTALERQVYELNKIQ  
 DKLPEKLLAEYKKKLEDTKKALDEQVKSATEFQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGM  
 MLNGKKYVMETTTNDDYWKDFMVEGQVRVTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIV  
 DKEAFTKANTDKSNKKEQQDNSAKKEATPATPSKPTPSPVEKESQKQDSQKDDNKQLPSVEKENDASSESQKDKT  
 PATKPTKGEVSSSTTPTKVSTTQNVAKPTTASSKTTKDVVQTSAGSSEAKDSAPLQKANIKNNTNDGHTQSQNN  
 KNTQENKAKSLPQTGEESNKDMTLPMLALLALSSIVAFVLPKRKNLEHHHHHH

FIG. 1C

MAEETGGTNTEAQPKEAVASPTTTSEKAPETKPVANAVSVSNKEVEAPTSETKEAKEVKEVKAPKETKEVKPAA  
 KATNNTYPILNQELREAIKNPAIKDKDHSAPNSRPIDFEMKKKDGTTQQFYHYASSVKPARVIFTDSKPEIELGLQ  
 SGQFWRKFEVYEGDKKLPIKLVSYDTVVDYAYIRFSVSNGTKAVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSAD  
 KFKTEEDYKAEKLLAPYKKAKTALERQVYELNKIQDKLPEKLLAEYKKKLEDTKKALDEQVKSATEFQNVQPTNE  
 KMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGM LNGKKYVMETTTNDDYWKDFMVEGQVRVTISKDAKNNTRT  
 IIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDKEAFTKANTDKSNKKEQQDNSAKKEATPATPSKPTPSPVE  
 KESQKQDSQKDDNKQLPSVEKENDASSESQK

FIG. 1D

3/29

	1		60
ID3	-MAEETGGTNTEAQPKEAVASP-TTTSEKAPETK----	PVANAVSVSNKEVEAPTSETK	
ID8	--AEETGGTNTEAQPKEAVASP-TTTSEKAPETK----	PVANAVSVSNKEVEAPTSETK	
ID10	--AEETGGTNTEAQPKEAVASP-TTTSEKAPETK----	PVANAVSVSNKEVEAPTSETK	
ID13	--AEETGGTNTEAQPKEAVASP-TTTSEKAPETK----	PVANAVSVSNKEVEAPTSETK	
ID9	--AEETGGTNTEAQPKEAVASP-TTTSEKAPETK----	PVANAVSVSNKEVEAPTSETK	
ID12	--AEETGGTNTEAQPKEAVASP-TTTSEKAPETK----	PVANAVSVSNKEVEAPTSETK	
ID11	--AEETGGTNTEAQPKEAVASP-TTTTEKAPEAK----	PVANAVSVSNKEVEAPTSETK	
ID15	--AEETGGTNTEAQPKEAVASP-TTTTEKAPEAK----	PVANAVSVSNKEVEAPTSETK	
ID18	--AEETGGTNTEAQPKEAVASP-TTTTEKAPEAK----	PVANAVSVSNKEVEAPTSETK	
ID16	--AEETGGTNTEAQPKEAVASP-TTTTEKAPEAK----	PVANAVSVSNKEVEAPTSETK	
ID17	--AEETGGTNTEAQPKEAVASP-TTTSEKAPETK----	PVANAVSVSNKEVEAPTSETK	
ID20	--AEETGGTNTEAQPKEAVASP-TTTSEKAPETK----	PVANAVSVSNKEVEAPTSETK	
ID19	--AEETGGTNTEAQPKEAVASP-TTTSEKAPETK----	PVANAVSVSNKEVEAPTSETK	
ID14	--AEETGGTNTEAQPKEAVASP-TTTSEKAPETK----	PVANAVSVSNKEVEAPTSETK	
ID4	MGAEETGGTNTEAQPKEAVASP-TTTSEKAPETK----	PVANAVSVSNKEVEAPTSETK	
ID27	MGAEETGGTNTEAQPKEAVASP-TTTSEKAPETK----	PVANAVSVSNKEVEAPTSETK	
ID1	-MAEETGGTNTEAQPKEAVASP-TTTSEKAPETK----	PVANAVSVSNKEVEAPTSETK	
ID7	--AEETGGTNTEAQPKEAVASP-TTTSEKAPETK----	PVANAVSVSNKEVEAPTSETK	
ID5	MGAEETGGTNTEAQPKEAVASP-TTTSEKAPETK----	PVANAVSVSNKEVEAPTSETK	
ID6	--AEETGVTNTEAQPKEAVASPTTTTTEKAPEAKPVAKPVANAVSVSNKEVEAPTSETK		
ID22	--AEETGVTNTEAQPKEAVASPTTTTTEKAPEAKPVAKPVANAVSVSNKEVEAPTSETK		
ID21	--AEETGVTNTEAQPKEAVASPTTTTTEKAPEAKPVAKPVANAVSVSNKEVEAPTSETK		
ID23	--AEETGGTNTEAQPKEAVASP-STTTEKAPEAK----	PVANAVSVSNKEVEAPTSETK	
ID24	--AEETGGTNTEAQPKEAVASP-STTTEKAPEAK----	PVANAVSVSNKEVEAPTSETK	
ID26	--AEETGGTITETQPKTEAVASP-TTTTEKAPEAK----	PVANAVSVSNKEVEAPTSETK	
ID25	--AEETGGTITETQPKTEAVASP-TTTTEKAPEAK----	PVANAVSVSNKEVEAPTSETK	
	61		120
ID3	EAKEVK---EVKAPKETKEVKPAAKATNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID8	EAKEVK---EVKAPKETKEVKPAAKATNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID10	EAKEVK---EVKAPKETKEVKPAAKATNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID13	EAKEVK---EVKAPKETKEVKPAAKATNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID9	EAKEVK---EVKAPKETKEVKPAAKATNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID12	EAKEVK---EVKAPKETKAVKPAAKATNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID11	EA---K---EVKAPKETKAVKPAAKADNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID15	EA---K---EVKAPKETKAVKPAAKADNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID18	EA---K---EVKAPKETKAVKPAAKADNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID16	EA---K---EVKAPKETKAVKPAAKADNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID17	EAKEVK---EVKAPKETKAVKPAAKADNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID20	EAKEVK---EVKAPKETKAVKPAAKADNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID19	EAKEVK---EVKAPKETKAVKPAAKADNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID14	EAKEVK---EVKAPKETKEVKPAAKATNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID4	EAKEVK---EVKAPKETKEVKPAAKATNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID27	EAKEVK---EVKAPKETKEVKPAAKATNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID1	EAKEVK---EVKAPKETKEVKPAAKATNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID7	EAKEVK---EVKAPKETKEVKPAAKATNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID5	EAKEVK---EVKAPKETKEVKPAAKATNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID6	EAKEVKAVKEVKAPKEAKEKPAAKADNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID22	EAKEVKAVKEVKAPKEAKEKPAAKADNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID21	EAKEVKAVKEVKAPKEAKEKPAAKADNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID23	EAKEVK---EVKAPKETKEVKPATKADNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID24	EAKEVK---EVKAPKETKEVKPATKADNNTYPILNQELREAIKNPAIKDKDHSAPNSRPI		
ID26	EAKEVK---EVKAPNETKEVKPAAKSDNNTYPILNDELREAIKNPAIKDKDHSAPNSRPI		
ID25	EAKEVK---EVKAPNETKEVKPAAKSDNNTYPILNDELREAIKNPAIKDKDHSAPNSRPI		

FIG. 2A

4/29

121 180

ID3 DFEMKKKDGTTQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID8 DFEMKKKDGTTQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID10 DFEMKKKDGTTQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID13 DFEMKKKDGTTQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID9 DFEMKKKENGEEQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID12 DFEMKKKENGEEQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID11 DFEMKKKENGEEQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID15 DFEMKKKENGEEQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID18 DFEMKKKENGEEQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID16 DFEMKKKENGEEQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID17 DFEMKKKENGEEQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID20 DFEMKKKENGEEQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID19 DFEMKKKENGEEQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID14 DFEMKKKDGTTQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID4 DFEMKKKDGTTQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID27 DFEMKKKDGTTQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID1 DFEMKKKDGTTQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID7 DFEMKKKDGTTQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID5 DFEMKKKDGTTQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID6 DFEMKKKDGTTQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID22 DFEMKKKDGTTQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID21 DFEMKKKDGTTQQFYHYAGSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID23 DFEMKKKDGTTQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID24 DFEMKKKDGTTQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID26 DFEMKKKDGTTQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

ID25 DFEMKKKDGTTQQFYHYASSVKPARVIFTDSKPEIELGLQSGQFWRKFEVYEGDKKLPIKL

181 240

ID3 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID8 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID10 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID13 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID9 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID12 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID11 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID15 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID18 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID16 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID17 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID20 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID19 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID14 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID4 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID27 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID1 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID7 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID5 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID6 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID22 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID21 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID23 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID24 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID26 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

ID25 VSYDTVKDYAYIRFSVSNGTAKVKIVSSTHFNNKEEKYDYTLMEFAQPIYNSADKFKTEE

FIG. 2B

5/29

	241	300
ID3	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID8	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID10	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID13	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID9	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID12	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID11	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID15	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID18	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID16	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID17	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID20	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID19	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID14	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID4	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID27	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID1	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID7	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID5	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID6	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID22	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID21	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID23	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID24	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID26	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
ID25	DYKAEKLLAPYKKAKTTLERQVYELNKIQDKLPEKLKAEYKKKLEDTKKALDEQVKS	SAITE
	301	360
ID3	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID8	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID10	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID13	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID9	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID12	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID11	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID15	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID18	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID16	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID17	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID20	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID19	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID14	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID4	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID1	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID27	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID7	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID5	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID6	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID22	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID21	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID23	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID24	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID26	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	
ID25	FQNVQPTNEKMTDLQDTKYVVYESVENNESMMDTFVKHPIKTGMLNGKKYVMETTNDDY	

FIG. 2C

6/29

361 420

ID3 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID8 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID10 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID13 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID9 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID12 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID11 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID15 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID18 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID16 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID17 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID20 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID19 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID14 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID4 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID27 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID1 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID7 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID5 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID6 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID22 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID21 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID23 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID24 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID26 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

ID25 WKDFMVEGQRVRTISKDAKNNTRTIIFPYVEGKTLYDAIVKVHVKTIDYDGQYHVRIVDK

421 480

ID3 EAFKANTDKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID8 EAFKANTDKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID10 EAFKANTDKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID13 EAFKANTDKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID9 EAFKANTDKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID12 EAFKANTDKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID11 EAFKANTDKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID15 EAFKANTDKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID18 EAFKANTDKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID16 EAFKANTDKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID17 EAFKANTDKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID20 EAFKANTDKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID19 EAFKANTDKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID14 EAFKANTDKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID4 EAFKANTDKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID27 EAFKANTDKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID1 EAFKANTDKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID7 EAFKANTDKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID5 EAFKANTDKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID6 EAFKANADKTNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID22 EAFKANADKTNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID21 EAFKANADKTNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID23 EAFKANADKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID24 EAFKANADKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID26 EAFKANADKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

ID25 EAFKANADKSNKKEQQDNSAKKEATPATPSKPTSPVEKESQKQDSQKDDNKQLPSVEK

FIG. 2D

7/29

481 540

ID3 ENDASSESGDKTPATKPTKGEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID8 ENDASSESGDKTPATKPTKGEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID10 ENDASSESGDKTPATKPTKGEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID13 ENDASSESGDKTPATKPTKGEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID9 ENDASSESGDKTPATKPTKGEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID12 ENDASSESGDKTPATKPTKGEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID11 ENDASSESGDKTPATKPAKGEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID15 ENDASSESGDKTPATKPAKGEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID18 ENDASSESGDKTPATKPAKGEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID16 ENDASSESGDKTPATKPAKGEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID17 ENDASSESGDKTPATKPAKGEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID20 ENDASSESGDKTPATKPAKGEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID19 ENDASSESGDKTPATKPAKGEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID14 ENDASSESGDKTPATKPAKGEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID4 ENDASSESGDKTPATKPTKGEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID27 ENDASSESGKGVTLATKPTKGEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID1 -----

ID7 ENDASSESGKGVTLATKPTKGEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID5 -----

ID6 ENDASSESGKDKMPVTKPAKAEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID22 ENDASSESGKDKMPVTKPAKAEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID21 ENDASSESGKDKMPVTKPAKAEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID23 ENDASSESGDKTPPTKPAKAEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID24 ENDASSESGDKTPATKPAKAEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID26 ENDASSESGDKTPATKPAKGEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

ID25 ENDASSESGDKTPATKPAKGEVESSSTTPTKVVSTTQNVAKPTTASSKTTKDVVQTSAG

541 586

ID3 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID8 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID10 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID13 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID9 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID12 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID11 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID15 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID18 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID16 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID17 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID20 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID19 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID14 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID4 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID27 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID1 -----

ID7 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID5 -----

ID6 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID22 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID21 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID23 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID24 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID26 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

ID25 SSEAKDSAPLQKANIKNNDGHTQSQNNKNTQENKAKS-----

FIG. 2E

FIG. 3A

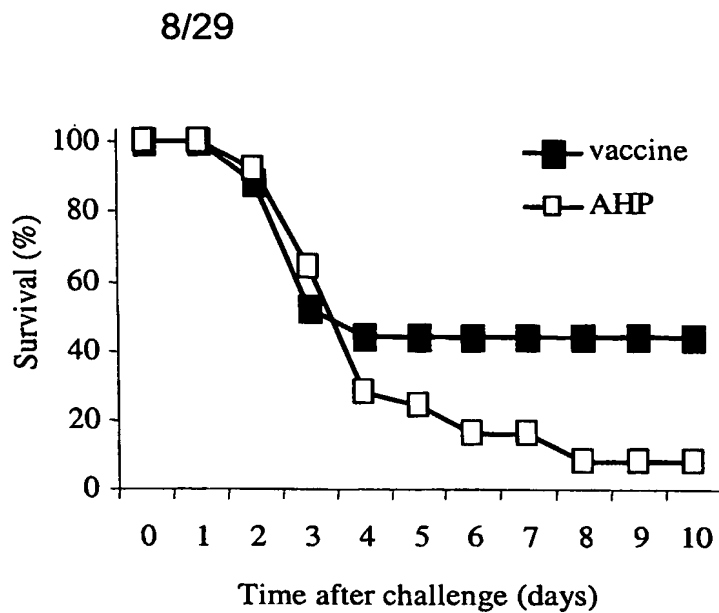


FIG. 3B

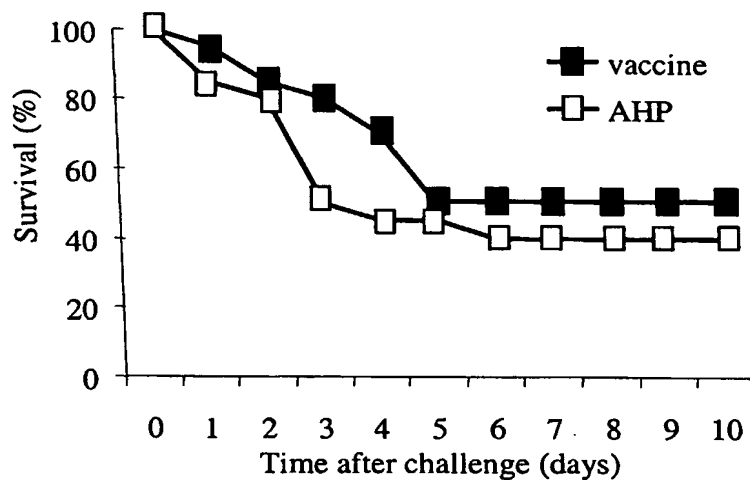
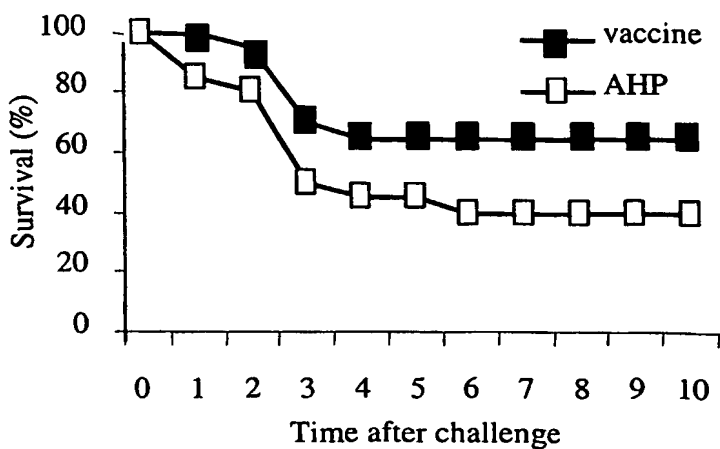


FIG. 3C





9/29

FIG. 4A

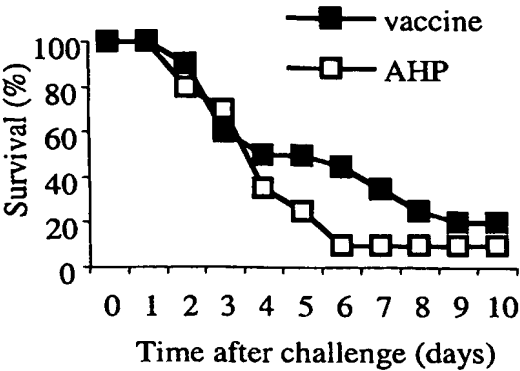


FIG. 4B

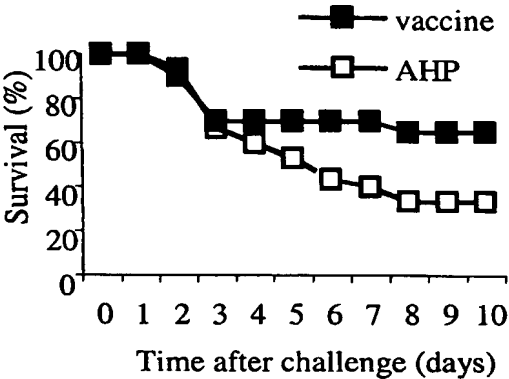
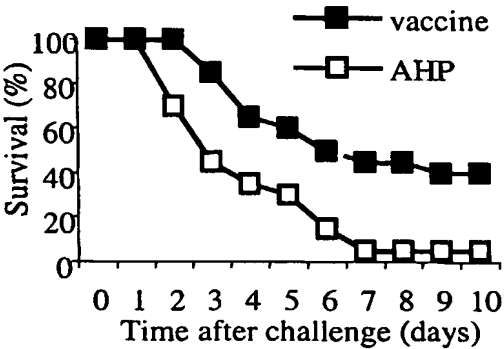


FIG. 4C



10/29

FIG. 4D

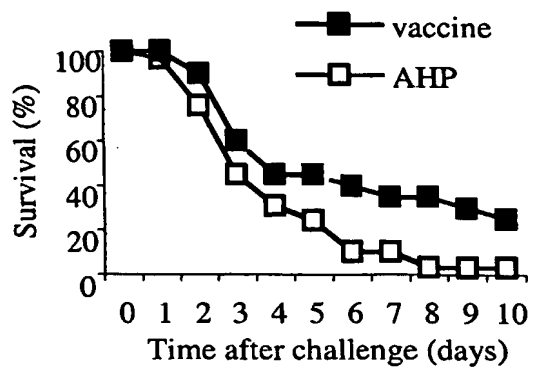


FIG. 4E

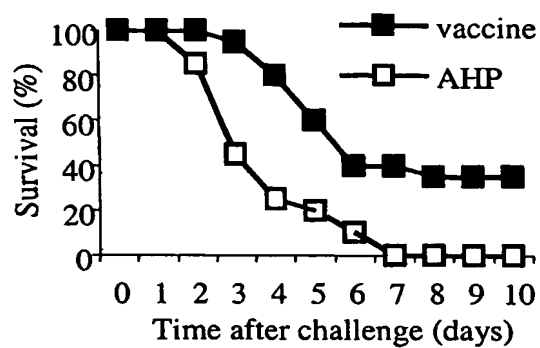
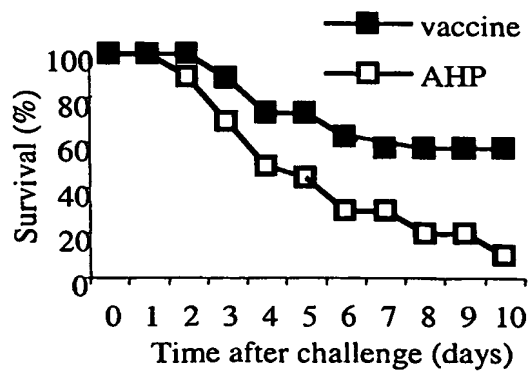


FIG. 4F



11/29

FIG. 4G

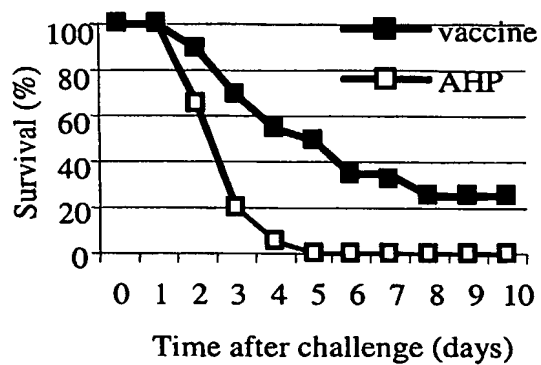
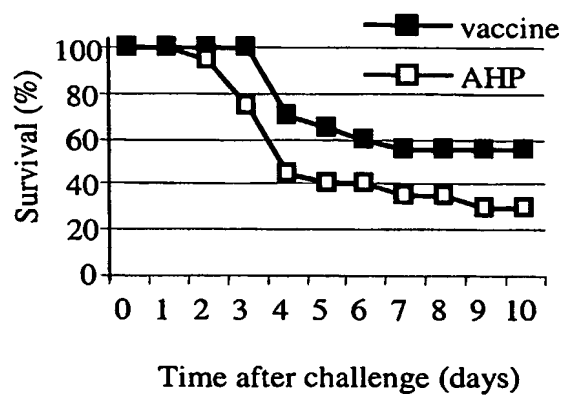


FIG. 4H



12/29

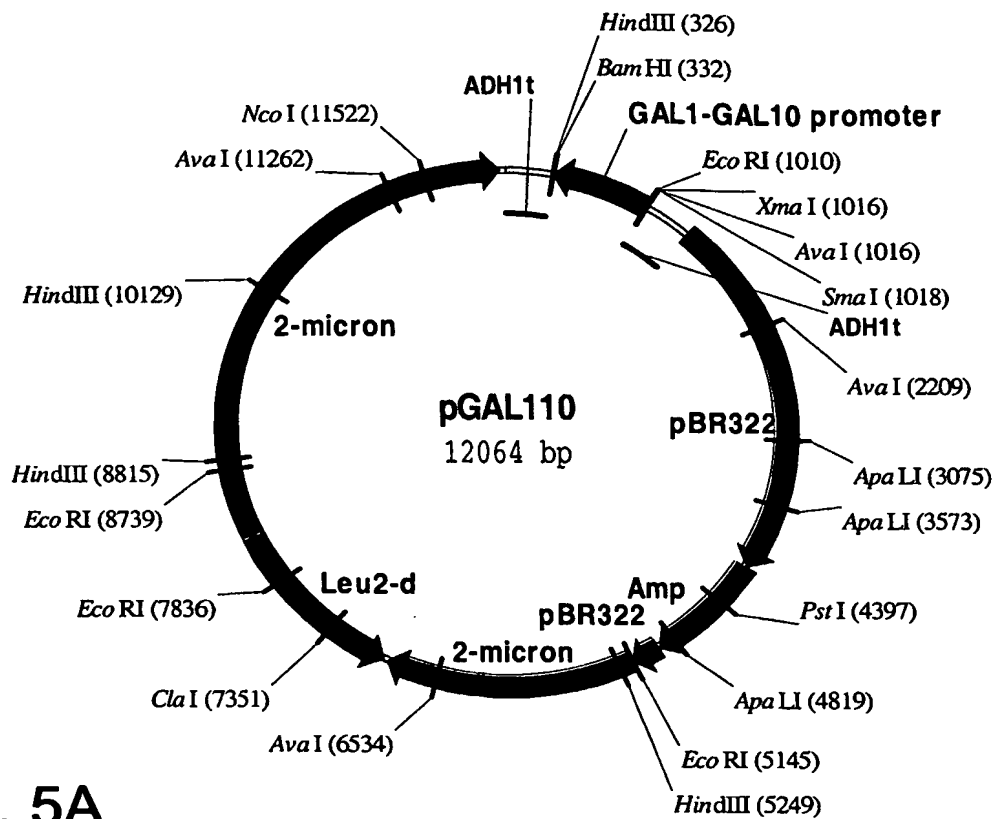


FIG. 5A

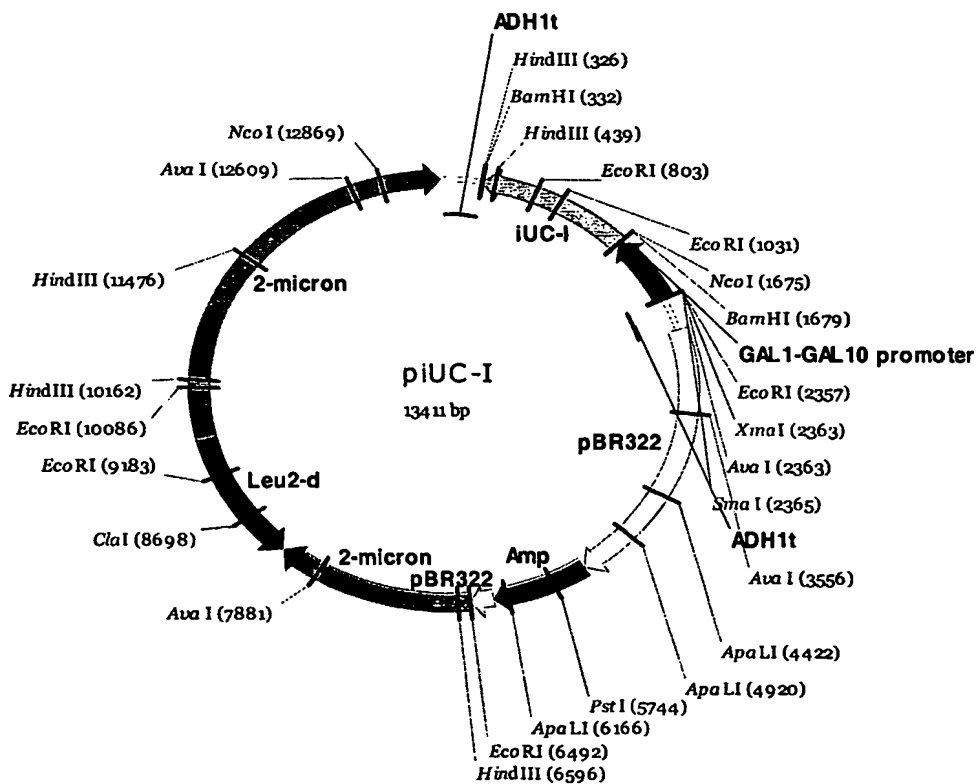


FIG. 5B

13/29

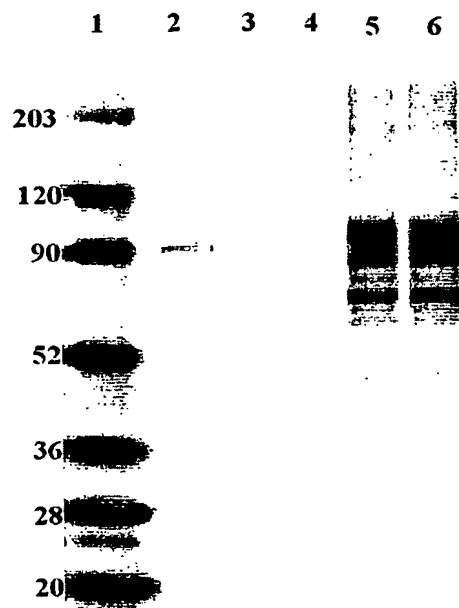


FIG. 6A

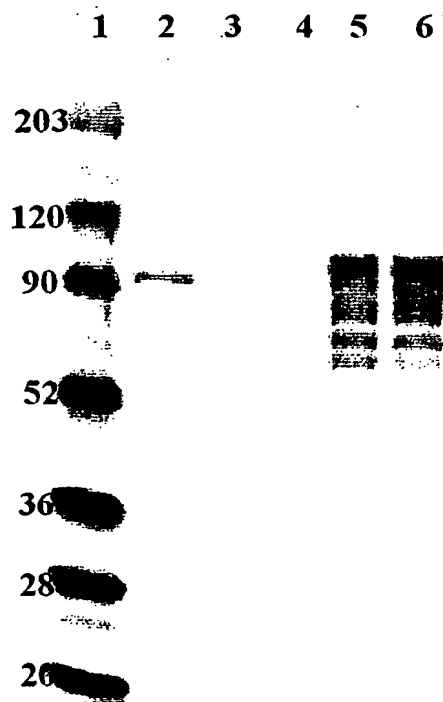


FIG. 6B

14/29

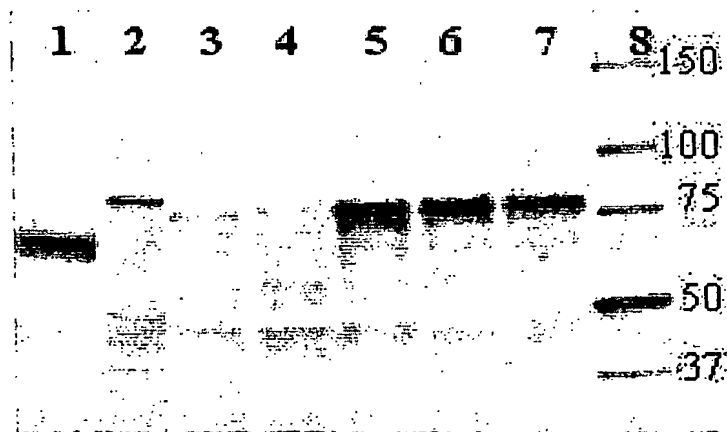


FIG. 7A

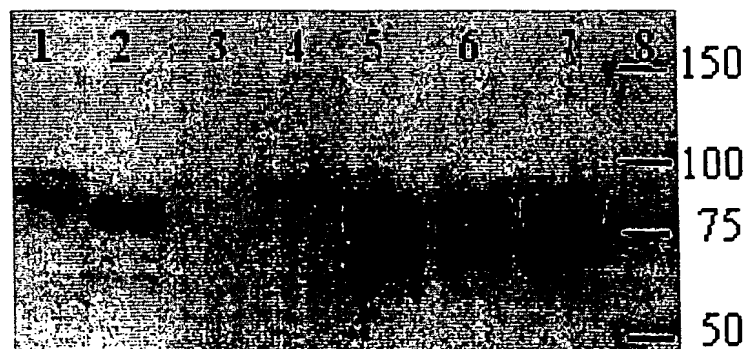


FIG. 7B

15/29

ATGAACAAACAGCAAAAAGAATTTAAATCATTTTATTCAATTAGAAAAGTCATCACTAGGCGTTGCATCTGTAGCA  
ATTAGTACACTTTTATTATTAATGTCAAATGGCGAAGCACAAGCAGCAGCTGAAGAAACAGGTGGTACAAATACA  
GAAGCACAACCAAAAACCTGAAGCAGTTGCAAGTCCAACAACAACATCTGAAAAAGCTCCAGAACTAAACCAGTA  
GCTAATGCTGTCTCAGTATCTAATAAAGAAAGTTGAGGCCCTACTTCTGAAACAAAAGAAGCTAAAGAAGTTAAA  
GAAGTTAAAGCCCTAAGGAAACAAAAGAAGTTAAACCAGCAGCAAAAGCCACTAACAATACATATCCTATTTTG  
AATCAGGAACCTTAGAGAAGCGATTAAAAACCCCTGCAATAAAAGACAAAGATCATAGCGCACCAAACTCTCGTCCA  
ATTGATTTTGAATGAAAAAGAAAGATGGAACCTCAACAGTTTTATCATTATGCAAGTTCTGTTAAACCTGCTAGA  
GTTATTTTCACTGATTCAAAACCAGAAATTGAATTAGGATTACAATCAGGTCAATTTTGGAGAAAATTTGAAGTT  
TATGAAGGTGACAAAAGTTGCCAATTAAATTAGTATCATACGATACCTGTTAAAGATTATGCTTACATTGCTTC  
TCTGTATCAAACGGAACAAAAGCTGTTAAATTTGTTAGTTCAACACACTTCAATAACAAAAGAAGAAAAATACGAT  
TACACATTAATGGAATTCGCACAACCAATTTATAACAGTGCAGATAAATTCAAAACCTGAAGAAGATTATAAAGCT  
GAAAAATTATTAGCGCCATATAAAAAAGCGAAAACACTAGAAAAGACAAGTTTATGAATTAAATAAAATTCAGAT  
AAACTTCCTGAAAAATTAAGGCTGAGTACAAGAAGAAATTAGAGGATACAAAGAAAGCTTTAGATGAGCAAGTG  
AAATCAGCTATTACTGAATTCCAAATGTACAACCAACAATGAAAAATGACTGATTTACAAGATACAAAATAT  
GTTGTTTATGAAAGTGTTGAGAAATAACGAATCTATGATGGATACTTTTGTAAACACCCCTATTAACAGGTATG  
CTTAACGGCAAAAAATATATGGTCATGGAACCTACTAATGACGATTACTGGAAAGATTTTCATGGTTGAAGGTCAA  
CGTGTTAGAACTATAAGCAAAGATGCTAAAAATAACTAGAACAAATTATTTCCCATATGTTGAAGGTAAAACT  
CTATATGATGCTATCGTTAAAGTTCACGTAAAAACGATTGATTATGATGGACAATACCATGTCAGATCGTTGAT  
AAAGAAGCATTACAAAAGCCAATACCGATAAATCTAACAAAAAGAACAACAAGATAAATCAGCTAAGAAAGGAA  
GCTACTCCAGCTACGCCTAGCAAACCAACACCATCACCTGTTGAAAAAGAATCACAAAAACAAGACAGCCAAAA  
GATGACAATAAAACAATTACCAAGTGTTGAAAAAGAAATGACGCATCTAGTGAGTCAGGTAAAGACAAAACGCCT  
GTCACAAAACCAACTAAAGGTGAAGTAGAATCAAGTAGTACAACCTCAACTAAGGTAGTATCTACGACTCAAAAT  
GTTGCAAAACCAACAACCTGCTTCATCAAAAACAACAAGATGTTGTTCAAACTTCAGCAGGTTCTAGCGAAGCA  
AAAGATAGTGCTCCATTACAAAAGCAACATTA AAAACACAATGATGGACACACTCAAAGCCAAAACAATAAA  
AATACACAAGAAAATAAGCAAAATCATTACCACAACTGGTGAAGAATCAAATAAAGATATGACATTACCATTA  
ATGGCATTATTAGCTTTAAGTAGCATCGTTGCATTTCGTATTACCTAGAAAACGTAAAAACCTCGAGCACCACCAC  
CACCACCACTGA

## FIG. 8A

ATGGCTGAAGAAACAGGTGGTACAATACAGAAGCACAACCAAAAACCTGAAGCAGTTGCAAGTCCAACAACA  
TCTGAAAAAGCTCCAGAACTAAACCAGTAGCTAATGCTGTCTCAGTATCTAATAAAGAAGTTGAGGCCCTACT  
TCTGAAACAAAAGAAGCTAAAGAAGTTAAAGAAGTTAAAGCCCTAAGGAAACAAAAGAAGTTAAACCAGCAGCA  
AAAGCCACTAACAATACATATCCTATTTTGAATCAGGAACCTAGAGAAGCGATTAAAAACCCCTGCAATAAAAGAC  
AAAGATCATAGCGCACCAAACTCTCGTCCAATTGATTTTGAAATGAAAAAGAAAGATGGAACCTCAACAGTTTTAT  
CATTATGCAAGTTCTGTAAACCTGCTAGAGTTATTTTCACTGATTCAAAACCAGAAATTGAATTAGGATTACAA  
TCAGGTCAATTTTGGAGAAAATTTGAAGTTTATGAAGGTGACAAAAAGTTGCCAATTAAATTAGTATCATACGAT  
ACTGTTAAAGATTATGCTTACATTTCGCTTCTCTGTATCAAACGGAACAAAAGCTGTTAAATTTGTTAGTTCAACA  
CACTTCAATAACAAGAAGAAAATACGATTACACATTAATGGAATTCGCACAACCAATTTATAACAGTGCAGAT  
AAATTCAAAACCTGAAGAAGATTATAAAGCTGAAAAATTTATAGCGCCATATAAAAAAGCGAAAACACTAGAAAGA  
CAAGTTTATGAATTAAATAAAATTTCAAGATAAACTTCCTGAAAAATTAAGGCTGAGTACAAGAAGAAATTAGAG  
GATACAAAGAAGCTTTAGATGAGCAAGTGAAATCAGCTATTACTGAATTCCAAATGTACAACCAACAATGAA  
AAAATGACTGATTTACAAGATACAAAATATGTTGTTTATGAAAGTGTTGAGAATAACGAATCTATGATGGATACT  
TTTGTAAACACCCCTATTAACAGGTATGCTTAACGGCAAAAAATATATGGTCATGGAACCTACTAATGACGAT  
TACTGAAAAGATTTTCATGGTTGAAGGTCAACGTGTTAGAACTATAAGCAAAGATGCTAAAAATAATACTAGAACA  
ATTATTTTCCCATATGTTGAAGGTAAACCTCTATATGATGCTATCGTTAAAGTTTCACGTAAAAACGATTGATTAT  
GATGGACAATACCATGTCAGAAATCGTTGATAAAGAAGCATTACAAAAGCCAATACCGATAAATCTAACAAAAA  
GAACAACAAGATAACTCAGCTAAGAAGGAAGCTACTCCAGCTACGCCTAGCAAACCAACACCATCACCTGTTGAA  
AAAGAATCACAAAAACAAGACAGCCAAAAAGATGACAATAAACAAATTACCAAGTGTTGAAAAAGAAATGACGCA  
TCTAGTGAGTCAGGTAAAGGCGTAACGCTTGCTACAAAACCAACTAAAGGTGAAGTAGAATCAAGTAGTACAAC  
CCAATAAGGTAGTATCTACGACTCAAAATGTTGCAAAACCAACAACCTGGTTTCATCAAAAACAACAAGATGTT  
GTTCAAACTTCAGCAGGTTCTAGCGAAGCAAAAGATAGTGCTCCATTACAAAAGCAACATTAACACACAAAT  
GATGGACACACTCAAAGCCAAAACAATAAAAAATACACAAGAAAATAAGCAAAATCACTCGAGCACCACCACCAC  
CACCACCTGA

## FIG. 8B

16/29

ATGGGTAAACAAGCAACAAAAGGAATTCAAGTCTTTCTACTCCATTAGAAAGTCTTCCTTGGGTGTTGCTTCTGTGCTATCTCCACCTTGTGTTGTTGATGTCTAACGGTGAAGCTCAAGCTGCTGCTGAAGAACTGGTGGTACCAACACTGAAGCTCAACCAAAGACCGAAGCTGTGCGTTCCCCAACCTACCTCTGAAAAGGCTCCAGAACTAAGCCA GTTGCTAACGCTGTCTCCGTTTCTAACAAGGAAGTCAAGCTCCAACCTCCGAACTAAGGAAGCTAAGGAAGTTAAGGAAGTCAAGGCTCCAAAGGAACTTAAGGAAGTCAAGCCAGCTGCTAAGGCTACCAACAACACTTACCCAATT TTGAACCAAGAATTGAGAGAAGCTATTAAGAACCAGCTATCAAGGACAAGGACCACTCCGCTCCAACTCTAGACCAATCGACTTCGAAATGAAGAAGAAGGACGGTACCCAACAATTCTACCCTACGCGTCTCTGTCAAGCCAGCT AGAGTTATTTTACCGACTCTAAGCCAGAAATCGAATTGGGTTTGCAATCCGGTCAATTCTGGAGAAAGTTTCGAA GTCTACGAAGGTGACAAGAAGTTGCCAATTAAGTTGGTTTCTACGACACCGTCAAGGACTACGCTTACATCAGATTCTCCGTTTCTAACGGTACTAAGGCTGTCAAGATTGTCTCTTCCACCCACTTCAACAACAAGGAAGAAAGTAC GACTACACTTTTGATGGAATTCGCTCAACCAATTTACAACCTCTGCTGACAAGTTCAAGACCGAAGAAGACTACAAG GCTGAAAAGTTGTTGGCTCCATACAAGAAGGCTAAGACTTTGGAAAGACAAGTTTACGAATTGAACAAGATCCAA GACAAGTTGCCAGAAAAGTTGAAGGCTGAATACAAGAAGAAGTTGGAAGACACCAAGAAGGCTTTGGACGAACAA GTCAAGTCCGCTATCAGCAATTCCAAACGTTCAACCAACTAACGAAAAGATGACTGACTTGCAAGACACTAAG TACGTCGCTTACGAATCCGTCGAAAACAACGAATCCATGATGGACACCTTCGTTAAGCACCAATTAAGACTGGT ATGTTGAACGGTAAGAAGTACATGGTCATGGAACCCTAACGACGACTACTGGAAGGACTTCATGGTTGAAGGT CAAAGAGTCAGAACCATCTCCAAGGACGCTAAGAACAACACTAGAACCATTTCTTCCATACGTTGAAGGTAAAG ACTTTGTACGACGCTATCGTCAAGGTTACGCTCAAGACTATTGACTACGACGGTCAATACCACGTTAGAATTGTT GACAAGGAAGCTTTTACCACCAAGGCTAACACCGACAAGTCCAACAAGGAACAACAAGACAACCTCTGCTAAGAAG GAAGCTACCCAGCTACCCCATCTAAGCCAACCCCATCTCCAGTTGAAAAGGAATCTCAAAAGCAAGACTCCCAA AAGGACGACAACAAGCAATTGCCATCCGTCGAAAAGGAAAACGACGCGTCTTCTGAATCCGGTAAGGACAAGACT CCAGCTACCAAGCCAACCTAAGGGTGAAGTTGAATCTTCTCTACTACTCCAACCAAGGTTGTCTCCACTACCCAA AACGTCGCTAAGCCAACCTACCGCTTCTTCCAAGACTACCAAGGACGTTGTCCAACTTCTGCTGGTTCTCTGAA GCTAAGGACTCTGCTCCATTGCAAAAGGCTAACATCAAGAACACCAACGACGCTACACCCAATCCCAAAACAAC AAGAACACTCAAGAAAACAAGGCTAAGTCTTTGCCACAAACCGGTGAAGAATCCAACAAGGACATGACCTTGCCA TTGATGGCTTTGTTGGCTTTGTCTTCCATCGTTGCTTTTCGCTTGGCAAGAAAGAGAAAGAACTAA

FIG. 8C

ATGGCTGAAGAACTGGTGGTACCAACACTGAAGCTCAACCAAAGACCGAAGCTGTGCGTTCCCCAACCTACC TCTGAAAAGGCTCCAGAACTAAGCCAGTTGCTAACGCTGTCTCCGTTTCTAACAAGGAAGTCAAGCTCCAACC TCCGAACTAAGGAAGCTAAGGAAGTTAAGGAAGTCAAGGCTCCAAAGGAACTAAGGAAGTCAAGCCAGCTGCT AAGGCTACCAACAACACTTACCCAATTTTGAACCAAGAATTGAGAGAAGCTATTAAGAACCAGCTATCAAGGAC AAGGACCACTCCGCTCCAACTCTAGACCAATCGACTTCGAAATGAAGAAGAAGGACGGTACCCAACAATTCTAC CACTACGCGTCTCTGTCAAGCCAGCTAGAGTTATTTTACCGACTCTAAGCCAGAAATCGAATTGGGTTTGCAA TCCGGTCAATTCTGGAGAAAGTTGGAAGTCTACGAAGGTGACAAGAAGTTGCCAATTAAGTTGGTTTCTTACGAC ACCGTCAAGGACTACGCTTACATCAGATTCTCCGTTTCTAACGGTACTAAGGCTGTCAAGATTGTCTCTTCCACC CACTTCAACAACAAGGAAGAAAAGTACGACTACACTTTGATGGAATTCGCTCAACCAATTTACAACCTCTGCTGAC AAGTTCAAGACCGAAGAAGACTACAAGGCTGAAAAGTTGTTGGCTCCATACAAGAAGGCTAAGACTTTGGAAAGA CAAGTTTACGAATTGAACAAGTCCAAGACAAGTTGCCAGAAAAGTTGAAGGCTGAATACAAGAAGAAGTTGGAA GACACCAAGAAGGCTTTGGACGAACAAGTCAAGTCCGCTATCACCGAATTCCAAACGTTCAACCAACTAACGAA AAGATGACTGACTTGCAAGACACTAAGTACGTCGCTTACGAATCCGTCGAAAACAACGAATCCATGATGGACACC TTCGTTAAGCACCAATTAAGACTGGTATGTTGAACGGTAAGAAGTACATGGTCATGGAACCCTAACGACGAC TACTGGAAGGACTTCATGGTTGAAGGTCAAAGAGTCAGAACCATCTCCAAGGACGCTAAGAACAACACTAGAAC ATTATCTTCCATACGTTGAAGGTAAAGCTTTGTACGACGCTATCGTCAAGGTTACGCTCAAGACTATTGACTAC GACGGTCAATACCACGTTAGAATTGTTGACAAGGAAGCTTTCACCAAGGCTAACACCGACAAGTCCAACAAGAAG GAACAACAAGACAACCTCTGCTAAGAAGGAAGCTACCCAGCTACCCCATCTAAGCCAACCCCATCTCCAGTTGAA AAGGAATCTCAAAAGCAAGACTCCCAAAGGACGACAACAAGCAATTGCCATCCGTCGAAAAGGAAAACGACGCG TCTTCTGAATCCGGTAAGGACAAGACTCCAGCTACCAAGCCAACCTAAGGGTGAAGTTGAATCTTCTCTACTACT CCAACCAAGGTTGTCTCCACTACCCAAAACGTCGTAAGCCAACCTACCGCTTCTTCCAAGACTACCAAGGACGTT GTCCAACTTCTGCTGGTTCTCTGAAGCTAAGGACTCTGCTCCATTGCAAAAGGCTAACATCAAGAACACCAAC GACGGTACACCCAATCCCAAAACAACAAGAACTCAAGAAAACAAGGCTAAGTCTTAA

FIG. 8D



17/29

ATGGCTGAAGAACTGGTGGTACCAACACTGAAGCTCAACCAAAGACCGAAGCTGTCGCTTCCCCAACCACTACC  
TCTGAAAAGGCTCCAGAACTAAGCCAGTTGCTAACGCTGTCTCCGTTTCTAACAAGGAAGTCGAAGCTCCAACC  
TCCGAACTAAGGAAGCTAAGGAAGTTAAGGAAGTCAAGGCTCCAAAGGAACTAAGGAAGTCAAGCCAGCTGCT  
AAGGCTACCAACAACACTTACCCAATTTTGAACCAAGAATTGAGAGAAGCTATTAAGAACCCAGCTATCAAGGAC  
AAGGACCACTCCGCTCCAAACTCTAGACCAATCGACTTCGAAATGAAGAAGAAGGACGGTACCCAACAATTTCTAC  
CACTACGCGTCTCTGTCAAGCCAGCTAGAGTTATTTTACCAGACTCTAAGCCAGAAATCGAATTGGGTTTGCAA  
TCCGGTCAATTCTGGAGAAAGTTCAAGTCTACGAAGGTGACAAGAAGTTGCCAATTAAGTTGGTTTCTTACGAC  
ACCGTCAAGGACTACGCTTACATCAGATTCTCCGTTTCTAACGGTACTAAGGCTGTCAAGATTGTCTCTTCCACC  
CACTTCAACAACAAGGAAGAAAAGTACGACTACACTTTGATGGAATTCGCTCAACCAATTTACAACCTCTGCTGAC  
AAGTTCAAGACCGAAGAAGACTACAAGGCTGAAAAGTTGTTGGCTCCATACAAGAAGGCTAAGACTTTGGAAAGA  
CAAGTTTACGAATTGAACAAGATCCAAGACAAGTTGCCAGAAAAGTTGAAGGCTGAATACAAGAAGAAGTTGGAA  
GACACCAAGAAGGCTTTGGACGAACAAGTCAAGTCCGCTATCACCGAATTCCAAAACGTTCAACCAACTAACGAA  
AAGATGACTGACTTGCAAGACACTAAGTACGTCGCTACGAATCCGTCGAAAACAACGAATCCATGATGGACACC  
TTCGTTAAGCACCCAATTAAGACTGGTATGTTGAACGGTAAAGTACATGGTCAAGGTTGAAACCACTAAGACACC  
TACTGGAAGGACTTCATGGTTGAAGGTCAAAGAGTCAGAACCATCTCCAAGGACGCTAAGAACAACACTAGAACC  
ATTATCTTCCCATACGTTGAAGGTAAGACTTTGTACGACGCTATCGTCAAGGTTACGTCAGACTATTGACTAC  
GACGGTCAATACCACGTTAGAATTGTTGACAAGGAAGCTTTTACCAAGGCTAACACCGACAAGTCCAACAAGAAG  
GAACAACAAGACAACCTCTGCTAAGAAGGAAGCTACCCAGCTACCCCATCTAAGCCAACCCCATAA

## FIG. 8E

ATGGCTGAAGAACTGGTGGTACCAACACTGAAGCTCAACCAAAGACCGAAGCTGTCGCTTCCCCAACCACTACC  
TCTGAAAAGGCTCCAGAACTAAGCCAGTTGCTAACGCTGTCTCCGTTTCTAACAAGGAAGTCGAAGCTCCAACC  
TCCGAACTAAGGAAGCTAAGGAAGTTAAGGAAGTCAAGGCTCCAAAGGAACTAAGGAAGTCAAGCCAGCTGCT  
AAGGCTACCAACAACACTTACCCAATTTTGAACCAAGAATTGAGAGAAGCTATTAAGAACCCAGCTATCAAGGAC  
AAGGACCACTCCGCTCCAAACTCTAGACCAATCGACTTCGAAATGAAGAAGAAGGACGGTACCCAACAATTTCTAC  
CACTACGCGTCTCTGTCAAGCCAGCTAGAGTTATTTTACCAGACTCTAAGCCAGAAATCGAATTGGGTTTGCAA  
TCCGGTCAATTCTGGAGAAAAGTTCAAGTCTACGAAGGTGACAAGAAGTTGCCAATTAAGTTGGTTTCTTACGAC  
ACCGTCAAGGACTACGCTTACATCAGATTCTCCGTTTCTAACGGTACTAAGGCTGTCAAGATTGTCTCTTCCACC  
CACTTCAACAACAAGGAAGAAAAGTACGACTACACTTTGATGGAATTCGCTCAACCAATTTACAACCTCTGCTGAC  
AAGTTCAAGACCGAAGAAGACTACAAGGCTGAAAAGTTGTTGGCTCCATACAAGAAGGCTAAGACTTTGGAAAGA  
CAAGTTTACGAATTGAACAAGATCCAAGACAAGTTGCCAGAAAAGTTGAAGGCTGAATACAAGAAGAAGTTGGAA  
GACACCAAGAAGGCTTTGGACGAACAAGTCAAGTCCGCTATCACCGAATTCCAAAACGTTCAACCAACTAACGAA  
AAGATGACTGACTTGCAAGACACTAAGTACGTCGCTACGAATCCGTCGAAAACAACGAATCCATGATGGACACC  
TTCGTTAAGCACCCAATTAAGACTGGTATGTTGAACGGTAAAGTACATGGTCAAGGTTGAAACCACTAAGACACC  
TACTGGAAGGACTTCATGGTTGAAGGTCAAAGAGTCAGAACCATCTCCAAGGACGCTAAGAACAACACTAGAACC  
ATTATCTTCCCATACGTTGAAGGTAAGACTTTGTACGACGCTATCGTCAAGGTTACGTCAGACTATTGACTAC  
GACGGTCAATACCACGTTAGAATTGTTGACAAGGAAGCTTTTACCAAGGCTAACACCGACAAGTCCAACAAGAAG  
GAACAACAAGACAACCTCTGCTAAGAAGGAAGCTACCCAGCTACCCCATCTAAGCCAACCCCATCTCCAGTTGAA  
AAGGAATCTCAAAGCAAGACTCCCAAAGGACGACACAACAAGCAATTGCCATCCGTCGAAAAGGAAAACGACGCG  
TCTTCTGAATCCGGTAAGGGTGTCACTTTGGCTACCAAGCCAACTAAGGGTGAAGTTGAATCTTCTTACTACT  
CCAACCAAGGTTGTCTCCACTACCCAAAACGTCGCTAAGCCAACCTACCGTTCTTCCAAGACTACCAAGGACGTT  
GTCCAAACTTCTGCTGGTTTCTCTGAAGCTAAGGACTCTGCTCCATTGCAAAAGGCTAACATCAAGCACACCAAC  
GACGGTCACACCCAATCCCAAACAACAAGAACACTCAAGAAAACAAGGCTAAGTCTTAA

## FIG. 8F

18/29

ATGGCTGAAGAACTGGTGGTACCAACACTGAAGCTCAACCAAAGACCGAAGCTGTCGCTTCCCCAACCCTACC  
TCTGAAAAGGCTCCAGAACTAAGCCAGTTGCTAACGCTGTCTCCGTTTCTAACAAAGGAAGTCGAAGCTCCAACC  
TCCGAACTAAGGAAGCTAAGGAAGTTAAGGAAGTCAAGGCTCCAAAGGAACTAAGGAAGTCAAGCCAGCTGCT  
AAGGCTACCAACAACACTTACCCAATTTTGAACCAAGAATTGAGAGAAGCTATTAAGAACCCAGCTATCAAGGAC  
AAGGACCACTCCGCTCCAACTCTAGACCAATCGACTTCGAAATGAAGAAGAAGGACGGTACCCAACAATTCTAC  
CACTACGCGTCCCTCTGTCAAGCCAGCTAGAGTTATTTTACCGACTCTAAGCCAGAAATCGAATTGGGTTTGCAA  
TCCGGTCAATTCTGGAGAAAGTTTGAAGTCTACGAAGGTGACAAGAAGTTGCCAATTAAGTTGGTTTCTTACGAC  
ACCGTCAAGGACTACGCTTACATCAGATTCTCCGTTTCTAACGGTACTAAGGCTGTCAAGATTGTCTCTTCCACC  
CACTTCAACAACAAGGAAGAAAAGTACGACTACACTTTGATGGAATTCGCTCAACCAATTTACAACCTCTGCTGAC  
AAGTTCAAGACCGAAGAAGACTACAAGGCTGAAAAGTTGTTGGCTCCATACAAGAAGGCTAAGACTTTGGAAAGA  
CAAGTTTACGAATTGAACAAGATCCAAGACAAGTTGCCAGAAAAGTTGAAGGCTGAATACAAGAAGAAGTTGGAA  
GACACCAAGAAGGCTTTGGACGAACAAGTCAAGTCCGCTATCACCGAATTCCAAACGTTCAACCAACTAACGAA  
AAGATGACTGACTTGCAAGACACTAAGTACGTCGCTACGAATCCGTCGAAAACAACGAATCCATGATGGACACC  
TTCGTTAAGCACCCAATTAAGACTGGTATGTTGAACGGTAAGAAGTACATGGTCAATGGAAACCACTAACGACGAC  
TACTGGAAGGACTTCATGGTTGAAGGTCAAAGAGTCAGAACCATCTCCAAGGACGCTAAGAACAACACTAGAACC  
ATTATCTTCCCATACGTTGAAGGTAAGACTTTGTACGACGCTATCGTCAAGGTTACGTCGAAGACTATTGACTAC  
GACGGTCAATACCACGTTAGAATTGTTGACAAGGAAGCTTTCACCAAGGCTAACACCGACAAGTCCAACAAGAAG  
GAACAACAAGACAACCTCTGCTAAGAAGGAAGCTACCCAGTACCCCATCTAAGCCAACCCCATCTCCAGTTGAA  
AAGGAATCTCAAAGCAAGACTCCCAAAAGGACGACAACAAGCAATTGCCATCCGTCGAAAAGGAAAACGACGCG  
TCTTCTGAATCCGGTAAGGGCGTCACTTTGGCTACCAAGCCAACTAAGGGTGAAGTTGAATCTTCTCTACTACT  
CCAACCAAGGTTGTCTCCACTACCCAAAACGTCGCTAAGCCAACCTACCGGTTCTTCCAAGACTACCAAGGACGTT  
GTCCAAACTTCTGCTGGTTCTCTGAAGCTAAGGACTCTGCTCCATTGCAAAAGGCTAACATCAAGCACACCAAC  
GACGGTCACACCCAATCCCAAAACAACAAGAACACTCAAGAAAACAAGGCTAAGTCTTAA

FIG. 8G

ATGGCTGAAGAACTGGTGGTACCAACACTGAAGCTCAACCAAAGACCGAAGCTGTCGCTTCCCCAACCCTACC  
TCTGAAAAGGCTCCAGAACTAAGCCAGTTGCTAACGCTGTCTCCGTTTCTAACAAAGGAAGTCGAAGCTCCAACC  
TCCGAACTAAGGAAGCTAAGGAAGTTAAGGAAGTCAAGGCTCCAAAGGAACTAAGGAAGTCAAGCCAGCTGCT  
AAGGCTACCAACAACACTTACCCAATTTTGAACCAAGAATTGAGAGAAGCTATTAAGAACCCAGCTATCAAGGAC  
AAGGACCACTCCGCTCCAACTCTAGACCAATCGACTTCGAAATGAAGAAGAAGGACGGTACCCAACAATTCTAC  
CACTACGCGTCCCTCTGTCAAGCCAGCTAGAGTTATTTTACCGACTCTAAGCCAGAAATCGAATTGGGTTTGCAA  
TCCGGTCAATTCTGGAGAAAGTTTGAAGTCTACGAAGGTGACAAGAAGTTGCCAATTAAGTTGGTTTCTTACGAC  
ACCGTCAAGGACTACGCTTACATCAGATTCTCCGTTTCTAACGGTACTAAGGCTGTCAAGATTGTCTCTTCCACC  
CACTTCAACAACAAGGAAGAAAAGTACGACTACACTTTGATGGAATTCGCTCAACCAATTTACAACCTCTGCTGAC  
AAGTTCAAGACCGAAGAAGACTACAAGGCTGAAAAGTTGTTGGCTCCATACAAGAAGGCTAAGACTTTGGAAAGA  
CAAGTTTACGAATTGAACAAGATCCAAGACAAGTTGCCAGAAAAGTTGAAGGCTGAATACAAGAAGAAGTTGGAA  
GACACCAAGAAGGCTTTGGACGAACAAGTCAAGTCCGCTATCACCGAATTCCAAACGTTCAACCAACTAACGAA  
AAGATGACTGACTTGCAAGACACTAAGTACGTCGCTACGAATCCGTCGAAAACAACGAATCCATGATGGACACC  
TTCGTTAAGCACCCAATTAAGACTGGTATGTTGAACGGTAAGAAGTACATGGTCAATGGAAACCACTAACGACGAC  
TACTGGAAGGACTTCATGGTTGAAGGTCAAAGAGTCAGAACCATCTCCAAGGACGCTAAGAACAACACTAGAACC  
ATTATCTTCCCATACGTTGAAGGTAAGACTTTGTACGACGCTATCGTCAAGGTTACGTCGAAGACTATTGACTAC  
GACGGTCAATACCACGTTAGAATTGTTGACAAGGAAGCTTTCACCAAGGCTAACACCGACAAGTCCAACAAGAAG  
GAACAACAAGACAACCTCTGCTAAGAAGGAAGCTACCCAGCTACCCCATCTAAGCCAACCCCATCTCCAGTTGAA  
AAGGAATCTCAAAGCAAGACTCCCAAAAGGACGACAACAAGCAATTGCCATCCGTCGAAAAGGAAAACGACGCG  
TCTTCTGAATCCGGTAAGGGTGTTACTTTGGCTACCAAGCCAACTAAGGGTGAAGTTGAATCTTCTCTACTACT  
CCAACCAAGGTTGTCTCCACTACCCAAAACGTCGCTAAGCCAACCTACCGGTTCTTCCAAGACTACCAAGGACGTT  
GTCCAAACTTCTGCTGGTTCTCTGAAGCTAAGGACTCTGCTCCATTGCAAAAGGCTAACATCAAGCACACCAAC  
GACGGTCACACCCAATCCCAAAACAACAAGAACACTCAAGAAAACAAGGCTAAGTCTTAA

FIG. 8H

19/29

ATGGCTGAAGAACTGGTGGTACCAACACTGAAGCTCAACCAAAGACCGAAGCTGTGCGTTCCCCAACCACTACC  
TCTGAAAAGGCTCCAGAACTAAGCCAGTTGCTAACGCTGTCTCCGTTTCTAACAAGGAAGTCGAAGCTCCAACC  
TCCGAACTAAGGAAGCTAAGGAAGTTAAGGAAGTCAAGGCTCCAAAGGAACTAAGGAAGTCAAGCCAGCTGCT  
AAGGCTACCAACAACACTTACCCAATTTTGAACCAAGAATTGAGAGAAGCTATTAAGAACCCAGCTATCAAGGAC  
AAGGACCACTCCGCTCCAACTCTAGACCAATCGACTTCGAAATGAAGAAGAAGGACGGTACCCAACAATTTCTAC  
CACTACGCGTCTCTGTCAAGCCAGCTAGAGTTATTTTACCAGCTCTAAGCCAGAAATCGAATTGGGTTTGCAA  
TCCGGTCAATTTCTGGAGAAAGTTTGAAGTCTACGAAGGTGACAAGAAGTTGCCAATTAAGTTGGTTTCTTACGAC  
ACCGTCAAGGACTACGTTTACATCAGATTCTCCGTTTCTAACGGTACTAAGGCTGTCAAGATTGTCTCTTCCACC  
CACTTCAACAACAAGGAAGAAAAGTACGACTACACTTTGATGGAATTTCGCTCAACCAATTTACAACCTGTCTGAC  
AAGTTCAAGACCGAAGAAGACTACAAGGCTGAAAAGTTGTTGGCTCCATACAAGAAGGCTAAGACTTTTGAAAGA  
CAAGTTTACGAATTGAACAAGATCCAAGACAAGTTGCCAGAAAAGTTGAAGGCTGAATACAAGAAGAAGTTGGAA  
GACACCAAGAAGGCTTTGGACGAACAAGTCAAGTCCGCTATCACCGAATTTCCAAAACGTTCAACCAACTAACGAA  
AAGATGACTGACTTGCAAGACACTAAGTACGTCGTCTACGAATCCGTCGAAAACAACGAATCCATGATGGACACC  
TTCGTTAAGCACCAATTAAGACTGGTATGTTGAACGGTAAGAAGTACATGGTTCATGGAAACCACTAACGACGAC  
TACTGGAAGGACTTCATGGTTGAAGGTCAAAGAGTCAGAACCATCTCCAAGGACGCTAAGAACAACACTAGAACC  
ATTATCTTCCCATACGTTGAAGGTAAGACTTTGTACGACGCTATCGTCAAGGTTACGTCGAAGACTATTGACTAC  
GACGGTCAATACCACGTTAGAATTGTTGACAAGGAAGCTTTCACCAAGGCTAACACCGACAAGTCCAACAAGAAG  
GAACAACAAGACAACCTCTGCTAAGAAGGAAGCTACCCAGTACCCCATCTAAGCCAACCCCATCTCCAGTTGAA  
AAGGAATCTCAAAAGCAAGACTCCCAAAAGGACGACAACAAGCAATTGCCATCCGTCGAAAAGGAAAACGACGCG  
TCTTCTGAATCCGGTAAGGGCGTTACTTTGGCTACCAAGCCAACCTAAGGGTGAAGTTGAATCTTCTCTACTACT  
CCAACCAAGGTTGTCTCCACTACCCAAAACGTCGCTAAGCCAACCTACCGGTTCTTCCAAGACTACCAAGGACGTT  
GTCCAACTTCTGCTGGTTCTCTGAAGCTAAGGACTCTGCTCCATTGCAAAAGGCTAACATCAAGCACACCAAC  
GACGGTCACACCCAATCCCAAAACAACAAGAACACTCAAGAAAACAAGGCTAAGTCTTAA

FIG. 8I

ATGGCTGAAGAACTGGTGGTACCAACACTGAAGCTCAACCAAAGACCGAAGCTGTGCGTTCCCCAACCACTACC  
TCTGAAAAGGCTCCAGAACTAAGCCAGTTGCTAACGCTGTCTCCGTTTCTAACAAGGAAGTCGAAGCTCCAACC  
TCCGAACTAAGGAAGCTAAGGAAGTTAAGGAAGTCAAGGCTCCAAAGGAACTAAGGAAGTCAAGCCAGCTGCT  
AAGGCTACCAACAACACTTACCCAATTTTGAACCAAGAATTGAGAGAAGCTATTAAGAACCCAGCTATCAAGGAC  
AAGGACCACTCCGCTCCAACTCTAGACCAATCGACTTCGAAATGAAGAAGAAGGACGGTACCCAACAATTTCTAC  
CACTACGCGTCTCTGTCAAGCCAGCTAGAGTTATTTTACCAGCTCTAAGCCAGAAATCGAATTGGGTTTGCAA  
TCCGGTCAATTTCTGGAGAAAAGTTTGAAGTCTACGAAGGTGACAAGAAGTTGCCAATTAAGTTGGTTTCTTACGAC  
ACCGTCAAGGACTACGTTTACATCAGATTCTCCGTTTCTAACGGTACTAAGGCTGTCAAGATTGTCTCTTCCACC  
CACTTCAACAACAAGGAAGAAAAGTACGACTACACTTTGATGGAATTTCGCTCAACCAATTTACAACCTGTCTGAC  
AAGTTCAAGACCGAAGAAGACTACAAGGCTGAAAAGTTGTTGGCTCCATACAAGAAGGCTAAGACTTTTGAAAGA  
CAAGTTTACGAATTGAACAAGATCCAAGACAAGTTGCCAGAAAAGTTGAAGGCTGAATACAAGAAGAAGTTGGAA  
GACACCAAGAAGGCTTTGGACGAACAAGTCAAGTCCGCTATCACCGAATTTCCAAAACGTTCAACCAACTAACGAA  
AAGATGACTGACTTGCAAGACACTAAGTACGTCGTCTACGAATCCGTCGAAAACAACGAATCCATGATGGACACC  
TTCGTTAAGCACCAATTAAGACTGGTATGTTGAACGGTAAGAAGTACATGGTTCATGGAAACCACTAACGACGAC  
TACTGGAAGGACTTCATGGTTGAAGGTCAAAGAGTCAGAACCATCTCCAAGGACGCTAAGAACAACACTAGAACC  
ATTATCTTCCCATACGTTGAAGGTAAGACTTTGTACGACGCTATCGTCAAGGTTACGTCGAAGACTATTGACTAC  
GACGGTCAATACCACGTTAGAATTGTTGACAAGGAAGCTTTCACCAAGGCTAACACCGACAAGTCCAACAAGAAG  
GAACAACAAGACAACCTCTGCTAAGAAGGAAGCTACCCAGCTACCCCATCTAAGCCAACCCCATCTCCAGTTGAA  
AAGGAATCTCAAAAGCAAGACTCCCAAAAGGACGACAACAAGCAATTGCCATCCGTCGAAAAGGAAAACGACGCG  
TCTTCTGAATCCGGTAAGGGTGTCACTTTAGCTACCAAGCCAACCTAAGGGTGAAGTTGAATCTTCTCTACTACT  
CCAACCAAGGTTGTCTCCACTACCCAAAACGTCGCTAAGCCAACCTACCGGTTCTTCCAAGACTACCAAGGACGTT  
GTCCAACTTCTGCTGGTTCTCTGAAGCTAAGGACTCTGCTCCATTGCAAAAGGCTAACATCAAGCACACCAAC  
GACGGTCACACCCAATCCCAAAACAACAAGAACACTCAAGAAAACAAGGCTAAGTCTTAA

FIG. 8J

20/29

ATGGCTGAAGAACTGGTGGTACCAACACTGAAGCTCAACCAAAGACCGAAGCTGTCGCTTCCCCAACCCTACC  
TCTGAAAAGGCTCCAGAACTAAGCCAGTTGCTAACGCTGTCTCCGTTTCTAACAAGGAAGTCGAAGCTCCAACC  
TCCGAACTAAGGAAGCTAAGGAAGTTAAGGAAGTCAAGGCTCCAAAGGAACTAAGGAAGTCAAGCCAGCTGCT  
AAGGCTACCAACAACACTTACCCAATTTTGAACCAAGAATTGAGAGAAGCTATTAAGAACCCAGCTATCAAGGAC  
AAGGACCACTCCGCTCCAACTCTAGACCAATCGACTTCGAAATGAAGAAGAAGGACGGTACCCAACAATTCTAC  
CACTACGCGTCCCTCTGTCAAGCCAGCTAGAGTTATTTTACCAGCTCTAAGCCAGAAATCGAATTGGGTTTGCAA  
TCCGGTCAATTCTGGAGAAAGTTTGAAGTCTACGAAGGTGACAAGAAGTTGCCAATTAAGTTGGTTTCCCTACGAC  
ACCGTCAAGGACTACGCTTACATCAGATTCTCCGTTTCTAACGGTACTAAGGCTGTCAAGATTGTCTCTTCCACC  
CACTTCAACAACAAGGAAGAAAAGTACGACTACACTTTGATGGAATTTCGCTCAACCAATTTACAACCTCTGCTGAC  
AAGTTCAAGACCGAAGAAGACTACAAGGCTGAAAAGTTGTTGGCTCCATACAAGAAGGCTAAGACTTTGGAAAGA  
CAAGTTTACGAATTGAACAAGATCCAAGACAAGTTGCCAGAAAAGTTGAAGGCTGAATACAAGAAGAAGTTGGAA  
GACACCAAGAAGGCTTTGGACGAACAAGTCAAGTCCGCTATCACCGAATTCAAAACGTTCAACCAACTAACGAA  
AAGATGACTGACTTGCAAGACACTAAGTACGTCGTTCTACGAATCCGTCGAAAACAACGAATCCATGATGGACACC  
TTCGTTAAGCACCCAATTAAGACTGGTATGTTGAACGGTAAGAAGTACATGGTCAATGGAAACCACTAACGACGAC  
TACTGGAAGGACTTCATGGTTGAAGGTCAAAGAGTCAGAACCATCTCCAAGGACGCTAAGAACAACACTAGAACC  
ATTATCTTCCCATACGTTGAAGGTAAGACTTTGTACGACGCTATCGTCAAGGTTTACGTCAGACTATTGACTAC  
GACGGTCAATACCACGTTAGAATTGTTGACAAGGAAGCTTTCACCAAGGCTAACACCGACAAGTCCAACAAGAAG  
GAACAACAAGACAACCTCTGCTAAGAAGGAAGCTACCCAGCTACCCCATCTAAGCCAACCCCATCTCCAGTTGAA  
AAGGAATCTCAAAAGCAAGACTCCCAAAAGGACGACAACAAGCAATTGCCATCCGTCGAAAAGGAAAACGACGCG  
TCTTCTGAATCCGGTAAGGGTGTCACTTTGGCTACCAAGCCAACCTAAGGGTGAAGTTGAATCTTCTCTACTACT  
CCAACCAAGGTTGTCTCCACTACCCAAAACGTCGCTAAGCCAACCTACCGGCTCTTCCAAGACTACCAAGGACGTT  
GTCCAAACTTCTGCTGGTTCCCTCTGAAGCTAAGGACTCTGCTCCATTGCAAAAGGCTAACATCAAGCACACCAAC  
GACGGTCACACCCAATCCCAAAACAACAAGAACACTCAAGAAAACAAGGCTAAGTCTTAA

FIG. 8K

ATGGCTGAAGAACTGGTGGTACCAACACTGAAGCTCAACCAAAGACCGAAGCTGTCGCTTCCCCAACCCTACC  
TCTGAAAAGGCTCCAGAACTAAGCCAGTTGCTAACGCTGTCTCCGTTTCTAACAAGGAAGTCGAAGCTCCAACC  
TCCGAACTAAGGAAGCTAAGGAAGTTAAGGAAGTCAAGGCTCCAAAGGAACTAAGGAAGTCAAGCCAGCTGCT  
AAGGCTACCAACAACACTTACCCAATTTTGAACCAAGAATTGAGAGAAGCTATTAAGAACCCAGCTATCAAGGAC  
AAGGACCACTCCGCTCCAACTCTAGACCAATCGACTTCGAAATGAAGAAGAAGGACGGTACCCAACAATTCTAC  
CACTACGCGTCCCTCTGTCAAGCCAGCTAGAGTTATTTTACCAGCTCTAAGCCAGAAATCGAATTGGGTTTGCAA  
TCCGGTCAATTCTGGAGAAAGTTTGAAGTCTACGAAGGTGACAAGAAGTTGCCAATTAAGTTGGTTTCCCTACGAC  
ACCGTCAAGGACTACGCTTACATCAGATTCTCCGTTTCTAACGGTACTAAGGCTGTCAAGATTGTCTCTTCCACC  
CACTTCAACAACAAGGAAGAAAAGTACGACTACACTTTGATGGAATTTCGCTCAACCAATTTACAACCTCTGCTGAC  
AAGTTCAAGACCGAAGAAGACTACAAGGCTGAAAAGTTGTTGGCTCCATACAAGAAGGCTAAGACTTTGGAAAGA  
CAAGTTTACGAATTGAACAAGATCCAAGACAAGTTGCCAGAAAAGTTGAAGGCTGAATACAAGAAGAAGTTGGAA  
GACACCAAGAAGGCTTTGGACGAACAAGTCAAGTCCGCTATCACCGAATTCAAAACGTTCAACCAACTAACGAA  
AAGATGACTGACTTGCAAGACACTAAGTACGTCGTTCTACGAATCCGTCGAAAACAACGAATCCATGATGGACACC  
TTCGTTAAGCACCCAATTAAGACTGGTATGTTGAACGGTAAGAAGTACATGGTCAATGGAAACCACTAACGACGAC  
TACTGGAAGGACTTCATGGTTGAAGGTCAAAGAGTCAGAACCATCTCCAAGGACGCTAAGAACAACACTAGAACC  
ATTATCTTCCCATACGTTGAAGGTAAGACTTTGTACGACGCTATCGTCAAGGTTTACGTCAGACTATTGACTAC  
GACGGTCAATACCACGTTAGAATTGTTGACAAGGAAGCTTTCACCAAGGCTAACACCGACAAGTCCAACAAGAAG  
GAACAACAAGACAACCTCTGCTAAGAAGGAAGCTACCCAGCTACCCCATCTAAGCCAACCCCATCTCCAGTTGAA  
AAGGAATCTCAAAAGCAAGACTCCCAAAAGGACGACAACAAGCAATTGCCATCCGTCGAAAAGGAAAACGACGCG  
TCTTCTGAATCCGGTAAGGGTGTCACTTTAGCTACCAAGCCAACCTAAGGGTGAAGTTGAATCTTCTCTACTACT  
CCAACCAAGGTTGTCTCCACTACCCAAAACGTCGCTAAGCCAACCTACCGGTTCTTCCAAGACTACCAAGGACGTT  
GTCCAAACTTCTGCTGGTTCCCTCTGAAGCTAAGGACTCTGCTCCATTGCAAAAGGCTAACATCAAGCACACCAAC  
GACGGTCACACCCAATCCCAAAACAACAAGAACACTCAAGAAAACAAGGCTAAGTCTTAA

FIG. 8L

21/29

ATGGCTGAAGAACTGGTGGTACCAACACTGAAGCTCAACCAAAGACCGAAGCTGTGCGTTCCCCAACCCTACC  
TCTGAAAAGGCTCCAGAACTAAGCCAGTTGCTAACGCTGTCTCCGTTTCTAACAAGGAAGTCGAAGCTCCAACC  
TCCGAACTAAGGAAGCTAAGGAAGTTAAGGAAGTCAAGGCTCCAAAGGAACTAAGGAAGTCAAGCCAGCTGCT  
AAGGCTACCAACAACACTTACCCAATTTTGAACCAAGAATTGAGAGAAGCTATTAAGAAGCCAGCTATCAAGGAC  
AAGGACCACTCCGCTCCAACTCTAGACCAATCGACTTCGAAATGAAGAAGAAGGACGGTACCCAACAATTTCTAC  
CACTACGCGTCTCTGTCAAGCCAGCTAGAGTTATTTTACCAGACTCTAAGCCAGAAATCGAATTGGGTTTGCAA  
TCCGGTCAATTCTGGAGAAAGTTCGAAGTCTACGAAGGTGACAAGAAGTTGCCAATTAAGTTGGTTTCTTACGAC  
ACCGTCAAGGACTACGCTTACATCAGATTCTCCGTTTCTAACGGTACTAAGGCTGTCAAGATTGTCTCTTCCACC  
CACTTCAACAACAAGGAAGAAAAGTACGACTACACTTTTGATGGAATTTCGCTCAACCAATTTACAACCTCTGCTGAC  
AAGTTCAAGACCGAAGAAGACTACAAGGCTGAAAAGTTGTTGGCTCCATACAAGAAGGCTAAGACTTTGGAAAGA  
CAAGTTTACGAATTGAACAAGATCCAAGACAAGTTGCCAGAAAAGTTGAAGGCTGAATACAAGAAGAAGTTGGAA  
GACACCAAGAAGGCTTTGGACGAACAAGTCAAGTCCGCTATCACCGAATTCCAAAACGTTCAACCAACTAACGAA  
AAGATGACTGACTTGCAAGACACTAAGTACGTCGCTACGAATCCGTCGAAAACAACGAATCCATGATGGACACC  
TTCGTTAAGCACCCAATTAAGACTGGTATGTTGAACGGTAAGAAGTACATGGTCATGGAAACCACTAACGACGAC  
TACTGGAAGGACTTCATGGTTGAAGGTCAAAGAGTCAGAACCATCTCCAAGGACGCTAAGAACAACACTAGAACC  
ATTATCTTCCCATACGTTGAAGGTAAAGACTTTGTACGACGCTATCGTCAAGGTTACGTCAGACTATTTGACTAC  
GACGGTCAATACCACGTTAGAATTGTTGACAAGGAAGCTTTACCAAGGCTAACACCGACAAGTCCAACAAGAAG  
GAACAACAAGACAACCTCTGCTAAGAAGGAAGCTACCCAGCTACCCCATCTAAGCCAACCCCATCTCCAGTTGAA  
AAGGAATCTCAAAGCAAGACTCCCAAAGGACGACAACAAGCAATTGCCATCCGTCGAAAAGGAAAACGACGCG  
TCTTCTGAATCCGGTAAGGGTGTACTTTGGCTACCAAGCCAACTAAGGGTGAAGTTGAATCTTCTCTACTACT  
CCAACCAAGGTTGTCTCCACTACCCAAAACGTCGCTAAGCCAACCTACCGGCTCTTCCAAGACTACCAAGGACGTT  
GTCCAAACTTCTGCTGGTTCTCTGAAGCTAAGGACTCTGCTCCATTGCAAAAGGCTAACATCAAGCACACCAAC  
GACGGTCACACCCAATCCCAAACAACAAGAACACTCAAGAAAACAAGGCTAAGTCTTAA

FIG. 8M

ATGGCTGAAGAACTGGTGGTACCAACACTGAAGCTCAACCAAAGACCGAAGCTTTGGCTTCCCCAACCCTACC  
ACTGAAAAGGCTCCAGAACTAAGCCAGTTGCTAACGCTGTCTCCGTTTCTAACAAGGAAGTCGAAGCTCCAACC  
TCCGAACTAAGGAAGCTAAGGAAGTTAAGGAAGTCAAGGCTCCAAAGGAACTAAGGCTGTCAAGCCAGCTGCT  
AAGGCTGACAACAACACTTACCCAATTTTGAACCAAGAATTGAGAGAAGCTATTAAGAAGCCAGCTATCAAGGAC  
AAGGACCACTCCGCTCCAACTCTAGACCAATCGACTTCGAAATGAAGAAGGAAAACGGTGAACAACAATTTCTAC  
CACTACGCGTCTCTGTCAAGCCAGCTAGAGTTATTTTACCAGACTCTAAGCCAGAAATCGAATTGGGTTTGCAA  
TCCGGTCAATTCTGGAGAAAGTTTCAAGTCTACGAAGGTGACAAGAAGTTGCCAATTAAGTTGGTTTCTTACGAC  
ACCGTCAAGGACTACGCTTACATCAGATTCTCCGTTTCTAACGGTACTAAGGCTGTCAAGATTGTCTCTTCCACC  
CACTTCAACAACAAGGAAGAAAAGTACGACTACACTTTTGATGGAATTTCGCTCAACCAATTTACAACCTCTGCTGAC  
AAGTTCAAGACCGAAGAAGACTACAAGGCTGAAAAGTTGTTGGCTCCATACAAGAAGGCTAAGACTTTGGAAAGA  
CAAGTTTACGAATTGAACAAGATCCAAGACAAGTTGCCAGAAAAGTTGAAGGCTGAATACAAGAAGAAGTTGGAA  
GACACCAAGAAGGCTTTGGACGAACAAGTCAAGTCCGCTATCACCGAATTCCAAAACGTTCAACCAACTAACGAA  
AAGATGACTGACTTGCAAGACACTAAGTACGTCGCTACGAATCCGTCGAAAACAACGAATCCATGATGGACACC  
TTCGTTAAGCACCCAATTAAGACTGGTATGTTGAACGGTAAGAAGTACATGGTCATGGAAACCACTAACGACGAC  
TACTGGAAGGACTTCATGGTTGAAGGTCAAAGAGTCAGAACCATCTCCAAGGACGCTAAGAACAACACTAGAACC  
ATTATCTTCCCATACGTTGAAGGTAAAGACTTTGTACGACGCTATCGTCAAGGTTACGTCAGACTATTGACTAC  
GACGGTCAATACCACGTTAGAATTGTTGACAAGGAAGCTTTACCAAGGCTAACACCGACAAGTCCAACAAGAAG  
GAACAACAAGACAACCTCTGCTAAGAAGGAAGCTACCCAGCTACCCCATCTAAGCCAACCCCATCTCCAGTTGAA  
AAGGAATCTCAAAGCAAGACTCCCAAAGGACGACAACAAGCAATTGCCATCCGTCGAAAAGGAAAACGACGCG  
TCTTCTGAATCCGGTAAGGACAAGACTCCAGCTACCAAGCCAGCTAAGGGTGAAGTTGAATCTTCTCTACTACT  
CCAACCAAGGTTGTCTCCACTACCCAAAACGTCGCTAAGCCAACCTACCGGCTCTTCCAAGACTACCAAGGACGTT  
GTCCAAACTTCTGCTGGTTCTCTGAAGCTAAGGACTCTGCTCCATTGCAAAAGGCTAACATCAAGAACACCAAC  
GACGGTCACACCCAATCCCAAACAACAAGAACACTCAAGAAAACAAGGCTAAGTCTTAA

FIG. 8N

22/29

ATGGCTGAAGAACTGGTGGTACCAACACTGAAGCTCAACCAAAGACCGAAGCTTTGGCTTCCCCAACCCTACC  
ACTGAAAAGGCTCCAGAACTAAGCCAGTTGCTAACGCTGTCTCCGTTTCTAACAAGGAAGTCGAAGCTCCAACC  
TCCGAACTAAGGAAGCTAAGGAAGTTAAGGAAGTCAAGGCTCCAAAGGAACTAAGGCTGTCAAGCCAGCTGCT  
AAGGCTGACAACAACACTTACCCAAATTTTGAACCAAGAATTGAGAGAAGCTATTAAGAAGCCAGCTATCAAGGAC  
AAGGACCACTCCGCTCCAACTCTAGACCAATCGACTTCGAAATGAAGAAGGAAAACGGTGAACAACAATTCTAC  
CACTACGCGTCTCTGTCAAGCCAGCTAGAGTTATTTTACCAGACTCTAAGCCAGAAATCGAATTGGGTTTGCAA  
TCCGGTCAATTCTGGAGAAAGTTCGAAGTCTACGAAGGTGACAAGAAGTTGCCAATTAAGTTGGTTTCCCTACGAC  
ACCGTCAAGGACTACGCTTACATCAGATTCTCCGTTTCTAACGGTACTAAGGCTGTCAAGATTGTCTCTTCCACC  
CACTTCAACAACAAGGAAGAAAAGTACGACTACACTTTTGATGGAATTTCGCTCAACCAATTTACAACCTCTGCTGAC  
AAGTTCAAGACCGAAGAAGACTACAAGGCTGAAAAGTTGTTGGCTCCATACAAGAAGGCTAAGACTTTGGAAAGA  
CAAGTTTACGAATTGAACAAGATCCAAGACAAGTTGCCAGAAAAGTTGAAGGCTGAATACAAGAAGAAGTTGGAA  
GACACCAAGAAGGCTTTGGACGAACAAGTCAAGTCCGCTATCACCGAATTCCAAAACGTTCAACCAACTAACGAA  
AAGATGACTGACTTGAAGACACTAAGTACGTCGCTACGAATCCGTCGAAAACAACGAATCCATGATGGACACC  
TTCGTTAAGCACCCAATTAAGACTGGTATGTTGAACGGTAAGAAGTACATGGTCATGGAAACCACTAACGACGAC  
TACTGGAAGGACTTCATGGTTGAAGGTCAAAGAGTCAGAACCATCTCCAAGGACGCTAAGAACAACACTAGAACC  
ATTATCTTCCCATACGTTGAAGGTAAGACTTTGTACGACGCTATCGTCAAGGTTACGTCAGACTATTGACTAC  
GACGGTCAATACCACGTTAGAATTGTTGACAAGGAAGCTTTCACCAAGGCTAACACCGACAAGTCCAACAAGAAG  
GAACAACAAGACAACCTCTGCTAAGAAGGAAGCTACCCAGCTACCCCATCTAAGCCAACCCCATCTCCAGTTGAA  
AAGGAATCTCAAAAGCAAGACTCCCAAAGGACGACAACAAGCAATTGCCATCCGTCGAAAAGGAAAACGACGCG  
TCTTCTGAATCCGGTAAGTAA

FIG. 8O

ATGGCTGAAGAACTGGTGGTACCAACACTGAAGCTCAACCAAAGACCGAAGCTTTGGCTTCCCCAACCCTACC  
ACTGAAAAGGCTCCAGAACTAAGCCAGTTGCTAACGCTGTCTCCGTTTCTAACAAGGAAGTCGAAGCTCCAACC  
TCCGAACTAAGGAAGCTAAGGAAGTTAAGGAAGTCAAGGCTCCAAAGGAACTAAGGCTGTCAAGCCAGCTGCT  
AAGGCTGACAACAACACTTACCCAAATTTTGAACCAAGAATTGAGAGAAGCTATTAAGAAGCCAGCTATCAAGGAC  
AAGGACCACTCCGCTCCAACTCTAGACCAATCGACTTCGAAATGAAGAAGGAAAACGGTGAACAACAATTCTAC  
CACTACGCGTCTCTGTCAAGCCAGCTAGAGTTATTTTACCAGACTCTAAGCCAGAAATCGAATTGGGTTTGCAA  
TCCGGTCAATTCTGGAGAAAGTTCGAAGTCTACGAAGGTGACAAGAAGTTGCCAATTAAGTTGGTTTCCCTACGAC  
ACCGTCAAGGACTACGCTTACATCAGATTCTCCGTTTCTAACGGTACTAAGGCTGTCAAGATTGTCTCTTCCACC  
CACTTCAACAACAAGGAAGAAAAGTACGACTACACTTTTGATGGAATTTCGCTCAACCAATTTACAACCTCTGCTGAC  
AAGTTCAAGACCGAAGAAGACTACAAGGCTGAAAAGTTGTTGGCTCCATACAAGAAGGCTAAGACTTTGGAAAGA  
CAAGTTTACGAATTGAACAAGATCCAAGACAAGTTGCCAGAAAAGTTGAAGGCTGAATACAAGAAGAAGTTGGAA  
GACACCAAGAAGGCTTTGGACGAACAAGTCAAGTCCGCTATCACCGAATTCCAAAACGTTCAACCAACTAACGAA  
AAGATGACTGACTTGAAGACACTAAGTACGTCGCTACGAATCCGTCGAAAACAACGAATCCATGATGGACACC  
TTCGTTAAGCACCCAATTAAGACTGGTATGTTGAACGGTAAGAAGTACATGGTCATGGAAACCACTAACGACGAC  
TACTGGAAGGACTTCATGGTTGAAGGTCAAAGAGTCAGAACCATCTCCAAGGACGCTAAGAACAACACTAGAACC  
ATTATCTTCCCATACGTTGAAGGTAAGACTTTGTACGACGCTATCGTCAAGGTTACGTCAGACTATTGACTAC  
GACGGTCAATACCACGTTAGAATTGTTGACAAGGAAGCTTTCACCAAGGCTAACACCGACAAGTCCAACAAGAAG  
GAACAACAAGACAACCTCTGCTAAGAAGGAAGCTACCCAGCTACCCCATCTAAGCCAACCCATAA

FIG. 8P

23/29

ATGGGTAACAAGCAACAAAAGGAATTCAGTCTTTCTACTCCATTAGAAAGTCTTCCTTGGGTGTTGCTTCTGTG  
 GCTATCTCCACCTTGTGTGTGTGATGTCTAACGGTGAAGCTCAAGCTGCTGAAGAACTGGTGGTACCAACACT  
 GAAGCTCAACCAAAGACCGAAGCTTTGGCTTCCCCAACCCTACCCTGAAAAGGCTCCAGAACTAAGCCAGTT  
 GCTAACGCTGTCTCCGTTTCTAACAAGGAAGTCGAAGCTCCAACCTCCGAACTAAGGAAGCTAAGGAAGTTAAG  
 GAAGTCAAGGCTCCAAAGGAACTAAGGCTGTCAAGCCAGCTGCTAAGGCTGACAACAACACTTACCCAATTTTG  
 AACCAAGAATTGAGAGAAGCTATTAAGAACCCAGCTATCAAGGACAAGGACCCTCCGCTCCAACCTCTAGACCA  
 ATCGACTTCCGAATGAAGAAGGAAAACGGTGAACAACAATTCTACCCTACGCGTCTCTGTCAAGCCAGCTAGA  
 GTTATTTTACCAGCTCTAAGCCAGAAATCGAATTGGGTTTGCAATCCGGTCAATTCTGGAGAAAGTTCGAAGTC  
 TACGAAGGTGACAAGAAGTTGCCAATTAAGTTGGTTTCCCTACGACACCGTCAAGGACTACGCTTACATCAGATTC  
 TCCGTTTCTAACGGTACTAAGGCTGTCAAGATTGTCTCTTCCACCCACTTCAACAACAAGGAAGAAAAGTACGAC  
 TACACTTTGATGGAATTCGCTCAACCAATTTACAACCTTGCTGACAAGTTCAAGACCGAAGAAGACTACAAGGCT  
 GAAAAGTTGTTGGCTCCATACAAGAAGGCTAAGACTTTGGAAAGACAAGTTTACGAATTGAACAAGATCCAAAGAC  
 AAGTTGCCAGAAAAGTTGAAGGCTGAATACAAGAAGAAGTTGGAAGACACCAAGAAGGCTTTGGACGAACAAGTC  
 AAGTCCGCTATCACCGAATTCCTAAAACGTTCAACCAACTAACGAAAAGATGACTGACTTGCAAGACACTAAGTAC  
 GTCGCTACGAATCCGTCGAAAACAACGAATCCATGATGGACACCTTCGTTAAGCACCCAATTAAGACTGGTATG  
 TTGAACGGTAAGAAGTACATGGTCAATGGAACCACTAACGACGACTACTGGAAGGACTTCATGGTTGAAGGTCAA  
 AGAGTCAGAACCATCTCCAAGGACGCTAAGAACAACACTAGAACCATTATCTTCCATACGTTGAAGGTAAAGACT  
 TTGTACGACGCTATCGTCAAGGTTACGTCGAAGACTATTGACTACGACGGTCAATACCACGTTAGAATTGTTGAC  
 AAGGAAGCTTTCACCAAGGCTAACACCGACAAGTCCAACAAGAAGGAACAACAAGACAACCTCTGCTAAGAAGGAA  
 GCTACCCAGCTACCCCATCTAAGCCAACCCCATCTCCAGTTGAAAAGGAATCTCAAAAGCAAGACTCCCAAAAG  
 GACGACAACAAGCAATTGCCATCCGTCGAAAAGGAAAACGACGCGTCTTCTGAATCCGGTAAAGGACAAGACTCCA  
 GCTACCAAGCCAGCTAAGGTTGAAGTTGAATCTTCTCTACTACTCCAACCAAGGTTGTCTCCACTACCCAAAAC  
 GTCGCTAAGCCAACCTACCGCTTCTTCCAAGACTACCAAGGACCTTGCTCCAACCTTCTGCTGGTTCTCTGAAGT  
 AAGGACTCTGCTCCATTGCAAAAGGCTAACATCAAGAACACCAACGACGGTCACACCCAATCCCAAAACAACAG  
 AACACTCAAGAAAACAAGGCTAAGTCTTTGCCACAAACCGGTGAAGAATCCAACAAGGACATGACCTTGCCATTG  
 ATGGCTTTGTTGGCTTTGTCTTCCATCGTTGCTTTTCGTTGCCAAGAAAGAGAAAGAACTAA

FIG. 8Q

ATGGCTGAAGAACTGGTGGTACCAACACTGAAGCTCAACCAAAGACCGAAGCTGTGCTTCCCCAACCCTACC  
 TCTGAAAAGGCTCCAGAACTAAGCCAGTTGCTAACGCTGTCTCCGTTTCTAACAAGGAAGTCGAAGCTCCAACC  
 TCCGAACTAAGGAAGCTAAGGAAGTTAAGGAAGTCAAGGCTCCAAAGGAACTAAGGCTGTCAAGCCAGCTACT  
 AAGGCTGACAACAACACTTACCCAATTTTGAACCAAGAATTGAGAGAAGCTATTAAGAACCAGCTATCAAGGAC  
 AAGGACCACTCCGCTCCAACTCTAGACCAATCGACTTCGAAATGAAGAAGGAAAACGGTGAACAACAATTCTAC  
 CACTACGCGTCTCTGTCAAGCCAGCTAGAGTTATTTTACCAGCTCTAAGCCAGAAATCGAATTGGGTTTGCAA  
 TCCGGTCAATTCTGGAGAAAGTTTGAAGTCTACGAAGGTGACAAGAAGTTGCCAATTAAGTTGGTTTCTTACGAC  
 ACCGTCAAGGACTACGCTTACATCAGATTCTCCGTTTCTAACGGTACTAAGGCTGTCAAGATTGTCTCTTCCACC  
 CACTTCAACAACAAGGAAGAAAAGTACGACTACACTTTGATGGAATTCGCTCAACCAATTTACAACCTCTGCTGAC  
 AAGTTCAAGACCGAAGAAGACTACAAGGCTGAAAAGTTGTTGGCTCCATACAAGAAGGCTAAGACTTTGGAAGA  
 CAAGTTTACGAATTGAACAAGATCCAAGACAAGTTGCCAGAAAAGTTGAAGGCTGAATACAAGAAGAAGTTGGAA  
 GACACCAAGAAGGCTTTGGACGAACAAGTCAAGTCCGCTATCACCGAATTCCAAACGTTCAACCAACTAACGAA  
 AAGATGACTGACTTGCAAGACACTAAGTACGTCGCTACGAATCCGTCGAAAACAACGAATCCATGATGGACACC  
 TTCGTTAAGCACCCAATTAAGACTGGTATGTTGAACGGTAAGAAGTACATGGTCAATGGAACCACTAAGCAGAC  
 TACTGGAAGGACTTCATGGTTGAAGGTCAAAGAGTCAGAACCATCTCCAAGGACGCTAAGAACAACACTAGAACC  
 ATTATCTTCCCATACGTTGAAGGTAAGACTTTGTACGACGCTATCGTCAAGGTTACGTCGAAGACTATTGACTAC  
 GACGGTCAATACCACGTTAGAATTGTTGACAAGGAAGCTTTCACCAAGGCTAACACCGACAAGTCCAACAAGAAG  
 GAACAACAAGACAACCTCTGCTAAGAAGGAAGCTACCCAGCTACCCCATCTAAGCCAACCCCATCTCCAGTTGAA  
 AAGGAATCTCAAAAGCAAGACTCCCAAAAGGACGACAACAAGCAATTGCCATCCGTCGAAAAGGAAAACGACGCG  
 TCTTCTGAATCCGGTAAGGACAAGACTCCAGCTACCAAGCCAGCTAAGGTTGAAGTTGAATCTTCTCTACTACT  
 CCAACCAAGGTTGTCTCCACTACCCAAAACGTCGCTAAGCCAACCTACCGCTTCTTCCAAGACTACCAAGGACGTT  
 GTCCAACCTTCTGCTGGTTCTCTGAAGCTAAGGACTCTGCTCCATTGCAAAAGGCTAACATCAAGAACACCAAC  
 GACGGTCACACCCAATCCCAAAACAACAAGAACTCAAGAAAACAAGGCTAAGTCTTAA

FIG. 8R

24/29

ATGGCTGAAGAACTGGTGGTACCAACACTGAAGCTCAACCAAAGACCGAAGCTGTCGCTTCCCCAACCCTACC  
TCTGAAAAGGCTCCAGAACTAAGCCAGTTGCTAACGCTGTCTCCGTTTCTAACAAGGAAGTCGAAGCTCCAACC  
TCCGAACTAAGGAAGCTAAGGAAGTTAAGGAAGTCAAGGCTCCAAAGGAACTAAGGCTGTCAAGCCAGCTACT  
AAGGCTGACAACAACACTTACCCAATTTTGAACCAAGAATTGAGAGAAGCTATTAAGAAGCCAGCTATCAAGGAC  
AAGGACCACTCCGCTCCAACTCTAGACCAATCGACTTCGAAATGAAGAAGGAAAACGGTGAACAACAATTCTAC  
CACTACGCGTCTCTGTCAAGCCAGCTAGAGTTATTTTCACCGACTCTAAGCCAGAAATCGAATTGGGTTTGCAA  
TCCGGTCAATTCTGGAGAAAAGTTCGAAGTCTACGAAGGTGACAAGAAGTTGCCAATTAAGTTGGTTTCCTACGAC  
ACCGTCAAGGACTACGCTTACATCAGATTCTCCGTTTCTAACGGTACTAAGGCTGTCAAGATTGTCTCTTCCACC  
CACTTCAACAACAAGGAAGAAAAGTACGACTACACTTTTGATGGAATTTCGCTCAACCAATTTACAACCTGTCTGAC  
AAGTTCAAGACCGAAGAAGACTACAAGGCTGAAAAGTTGTTGGCTCCATACAAGAAGGCTAAGACTTTGGAAAGA  
CAAGTTTACGAATTGAACAAGATCCAAGACAAGTTGCCAGAAAAGTTGAAGGCTGAATACAAGAAGAAGTTGGAA  
GACACCAAGAAGGCTTTGGACGAACAAGTCAAGTCCGCTATCACCGAATTCCAAAACGTTCAACCAACTAACGAA  
AAGATGACTGACTTGCAAGACACTAAGTACGTCGTCTACGAATCCGTCGAAAACAACGAATCCATGATGGACACC  
TTCGTTAAGCACCCAATTAAGACTGGTATGTTGAACGGTAAGAAGTACATGGTCATGGAAACCACTAACGACGAC  
TACTGGAAGGACTTCATGGTTGAAGGTCAAAGAGTCAGAACCATCTCCAAGGACGCTAAGAACAACACTAGAACC  
ATTATCTTCCCATACGTTGAAGGTAAGACTTTGTACGACGCTATCGTCAAGGTTACGTCAGACTATTGACTAC  
GACGGTCAATACCACGTTAGAATTGTTGACAAGGAAGCTTTCACCAAGGCTAACACCGACAAGTCCAACAAGAAG  
GAACAACAAGACAACCTCTGCTAAGAAGGAAGCTACCCAGCTACCCCATCTAAGCCAACCCCATCTCCAGTTGAA  
AAGGAATCTCAAAAGCAAGACTCCCAAAGGACGACAACAAGCAATTGCCATCCGTCGAAAAGGAAAACGACGCG  
TCTTCTGAATCCGGTAAGTAA

FIG. 8S

ATGGCTGAAGAACTGGTGGTACCAACACTGAAGCTCAACCAAAGACCGAAGCTGTCGCTTCCCCAACCCTACC  
TCTGAAAAGGCTCCAGAACTAAGCCAGTTGCTAACGCTGTCTCCGTTTCTAACAAGGAAGTCGAAGCTCCAACC  
TCCGAACTAAGGAAGCTAAGGAAGTTAAGGAAGTCAAGGCTCCAAAGGAACTAAGGCTGTCAAGCCAGCTACT  
AAGGCTGACAACAACACTTACCCAATTTTGAACCAAGAATTGAGAGAAGCTATTAAGAAGCCAGCTATCAAGGAC  
AAGGACCACTCCGCTCCAACTCTAGACCAATCGACTTCGAAATGAAGAAGGAAAACGGTGAACAACAATTCTAC  
CACTACGCGTCTCTGTCAAGCCAGCTAGAGTTATTTTCACCGACTCTAAGCCAGAAATCGAATTGGGTTTGCAA  
TCCGGTCAATTCTGGAGAAAAGTTCGAAGTCTACGAAGGTGACAAGAAGTTGCCAATTAAGTTGGTTTCCTACGAC  
ACCGTCAAGGACTACGCTTACATCAGATTCTCCGTTTCTAACGGTACTAAGGCTGTCAAGATTGTCTCTTCCACC  
CACTTCAACAACAAGGAAGAAAAGTACGACTACACTTTTGATGGAATTTCGCTCAACCAATTTACAACCTGTCTGAC  
AAGTTCAAGACCGAAGAAGACTACAAGGCTGAAAAGTTGTTGGCTCCATACAAGAAGGCTAAGACTTTGGAAAGA  
CAAGTTTACGAATTGAACAAGATCCAAGACAAGTTGCCAGAAAAGTTGAAGGCTGAATACAAGAAGAAGTTGGAA  
GACACCAAGAAGGCTTTGGACGAACAAGTCAAGTCCGCTATCACCGAATTCCAAAACGTTCAACCAACTAACGAA  
AAGATGACTGACTTGCAAGACACTAAGTACGTCGTCTACGAATCCGTCGAAAACAACGAATCCATGATGGACACC  
TTCGTTAAGCACCCAATTAAGACTGGTATGTTGAACGGTAAGAAGTACATGGTCATGGAAACCACTAACGACGAC  
TACTGGAAGGACTTCATGGTTGAAGGTCAAAGAGTCAGAACCATCTCCAAGGACGCTAAGAACAACACTAGAACC  
ATTATCTTCCCATACGTTGAAGGTAAGACTTTGTACGACGCTATCGTCAAGGTTACGTCAGACTATTGACTAC  
GACGGTCAATACCACGTTAGAATTGTTGACAAGGAAGCTTTCACCAAGGCTAACACCGACAAGTCCAACAAGAAG  
GAACAACAAGACAACCTCTGCTAAGAAGGAAGCTACCCAGCTACCCCATCTAAGCCAACCCATAA

FIG. 8T



25/29

ATGGGTAACAAGCAACAAAAGGAATTCAAGTCTTTCTACTCCATTAGAAAAGTCTTCCTTGGGTGTTGCTTCTGTC  
GCTATCTCCACCTTGTTGTTGTTGATGTCTAACGGTGAAGCTCAAGCTGCTGAAGAACTGGTGGTACCAACACT  
GAAGCTCAACCAAAGACCGAAGCTGTGCTTCCCCAACCCTACCTCTGAAAAGGCTCCAGAACTAAGCCAGTT  
GCTAACGCTGTCTCCGTTTCTAACAAGGAAGTCGAAGCTCCAACCTCCGAACTAAGGAAGCTAAGGAAGTTAAG  
GAAGTCAAGGCTCCAAAGGAACTAAGGCTGTCAAGCCAGCTACTAAGGCTGACAACAACACTTACCCAATTTTG  
AACCAAGAATTGAGAGAAGCTATTAAGAACCCAGCTATCAAGGACAAGGACCCTCCGCTCCAACTCTAGACCA  
ATCGACTTCGAAATGAAGAAGGAAAAACGGTGAACAACAATTCTACCCTACGCGTCCTCTGTCAAGCCAGCTAGA  
GTTATTTTTCACCGACTCTAAGCCAGAAATCGAATTGGGTTTGCAATCCGGTCAATTCTGGAGAAAGTTCGAAGTC  
TACGAAGGTGACAAGAAGTTGCCAATTAAAGTTGGTTTCCCTACGACACCGTCAAGGACTACGCTTACATCAGATTC  
TCCGTTTCTAACGGTACTAAGGCTGTCAAGATTGTCTCTTCCACCCACTTCAACAACAAGGAAGAAAAGTACGAC  
TACACTTTGATGGAATTGCTCAACCAATTTACAACCTCTGCTGACAAGTTCAAGACCGAAGAAGACTACAAGGCT  
GAAAAGTTGTTGGCTCCATACAAGAAGGCTAAGACTTTGGAAAGACAAGTTTACGAATTGAACAAGATCCAAGAC  
AAGTTGCCAGAAAAGTTGAAGGCTGAATACAAGAAGAAGTTGGAAGACACCAAGAAGGCTTTGGACGAACAAGTC  
AAGTCCGCTATCACCGAATTCCAAAACGTTCAACCAACTAACGAAAAGATGACTGACTTGCAAGACACTAAGTAC  
GTCGCTACGAATCCGTCGAAAACAACGAATCCATGATGGACACCTTCGTTAAGCACCCAATTAAGACTGGTATG  
TTGAACGGTAAGAAGTACATGGTCATGGAAACCACTAACGACGACTACTGGAAGGACTTCATGGTTGAAGGTCAA  
AGAGTCAGAACCATCTCCAAGGACGCTAAGAACAACACTAGAACCATTATCTTCCCATACGTTGAAGGTAAGACT  
TTGTACGACGCTATCGTCAAGGTTTACGCTCAAGACTATTGACTACGACGGTCAATACCACGTTAGAATTGTTGAC  
AAGGAAGCTTTACCAAGGCTAACACCGACAAGTCCAACAAGAAGGAACAACAAGACAACCTCTGCTAAGAAGGAA  
GCTACCCAGCTACCCCATCTAAGCCAACCCCATCTCCAGTTGAAAAGGAATCTCAAAAGCAAGACTCCCAAAAG  
GACGACAACAAGCAATTGCCATCCGTCGAAAAGGAAAACGACGCGTCTTCTGAATCCGGTAAAGGACAAGACTCCA  
GCTACCAAGCCAGCTAAGGGTGAAGTTGAATCTTCTCTACTACTCCAACCAAGGTTGTCTCCACTACCCAAAAC  
GTCGCTAAGCCAACTACCGCTTCTTCCAAGACTACCAAGGACGTTGTCCAACTTCTGCTGGTTCTCTGAAGCT  
AAGGACTCTGCTCCATTGCAAAAAGGCTAACATCAAGAACACCAACGACGGTCACACCCAATCCCAAAAACAACAG  
AACACTCAAGAAAACAAGGCTAAGTCTTTGCCACAACCGGTGAAGAATCCAACAAGGACATGACCTTGCCATTG  
ATGGCTTTGTTGGCTTTGTCTTCCATCGTTGCTTTTCGCTTTGCCAAGAAAGAGAAAGAACTAA

FIG. 8U

26/29

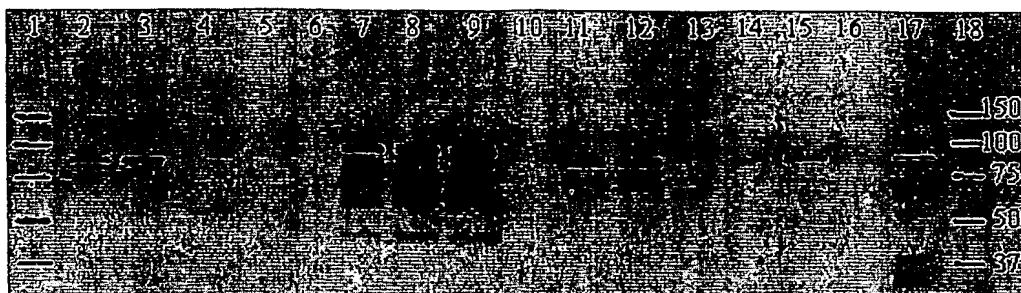


FIG. 9

27/29

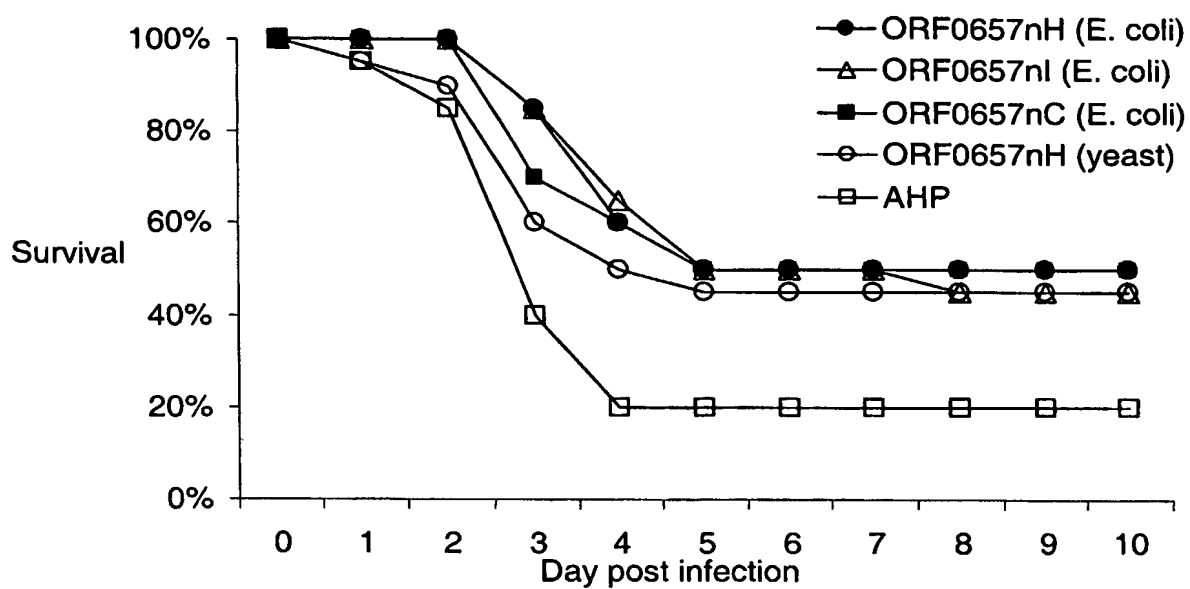


FIG. 10

28/29



FIG. 11

29/29

immunogen	animal #	imm.	day 0	day 9	imm.	wk 4	wk 8	wk 12	wk 16	wk 20	imm.	wk 24	wk 28	wk 32	wk 36
AHP	99R018	20,000	20,000	20,000	20,000	20,000	30,000		40,000	40,000	40,000	40,000	20,000	30,000	20,000
	00R015	40,000	40,000	40,000	40,000	40,000	40,000		40,000	40,000	40,000	40,000	40,000	40,000	40,000
	00-0163	20,000	20,000	20,000	20,000	20,000	20,000		15,000	10,000	20,000	20,000	20,000	20,000	20,000
	GMT	25,198	25,198	63,496	25,198	25,198	28,845		28,845	25,198	31,748	25,198	25,198	28,845	25,198
		imm.	imm.	imm.	imm.	imm.	imm.		imm.	imm.	imm.	imm.	imm.	imm.	imm.
ORF0657nC from E. coli on AHP	01-0024	20,000	40,000	40,000	80,000	80,000	80,000	80,000	60,000	60,000	60,000	60,000	80,000	40,000	40,000
	00-R014	40,000	80,000	80,000	160,000	160,000	160,000	160,000	120,000	80,000	80,000	80,000	160,000	160,000	160,000
	00-R023	20,000	80,000	80,000	160,000	160,000	160,000	80,000	60,000	40,000	40,000	40,000	120,000	80,000	80,000
	GMT	25,198	63,496	126,992	126,992	126,992	126,992	100,794	75,595	57,690	57,690	57,690	115,380	80,000	80,000
		imm.	imm.	imm.	imm.	imm.	imm.	imm.	imm.	imm.	imm.	imm.	imm.	imm.	imm.
0657nH from yeast on AHP	96-R044	10,000	40,000	40,000	120,000	120,000	120,000	160,000							
	96-R045	7,500	80,000	80,000	80,000	60,000	60,000	80,000							
	96-R047	20,000	80,000	80,000	160,000	120,000	120,000	160,000							
	GMT	11,447	63,496	115,380	95,244	126,992	126,992	126,992							
		imm.	imm.	imm.	imm.	imm.	imm.	imm.	imm.	imm.	imm.	imm.	imm.	imm.	imm.

FIG. 12